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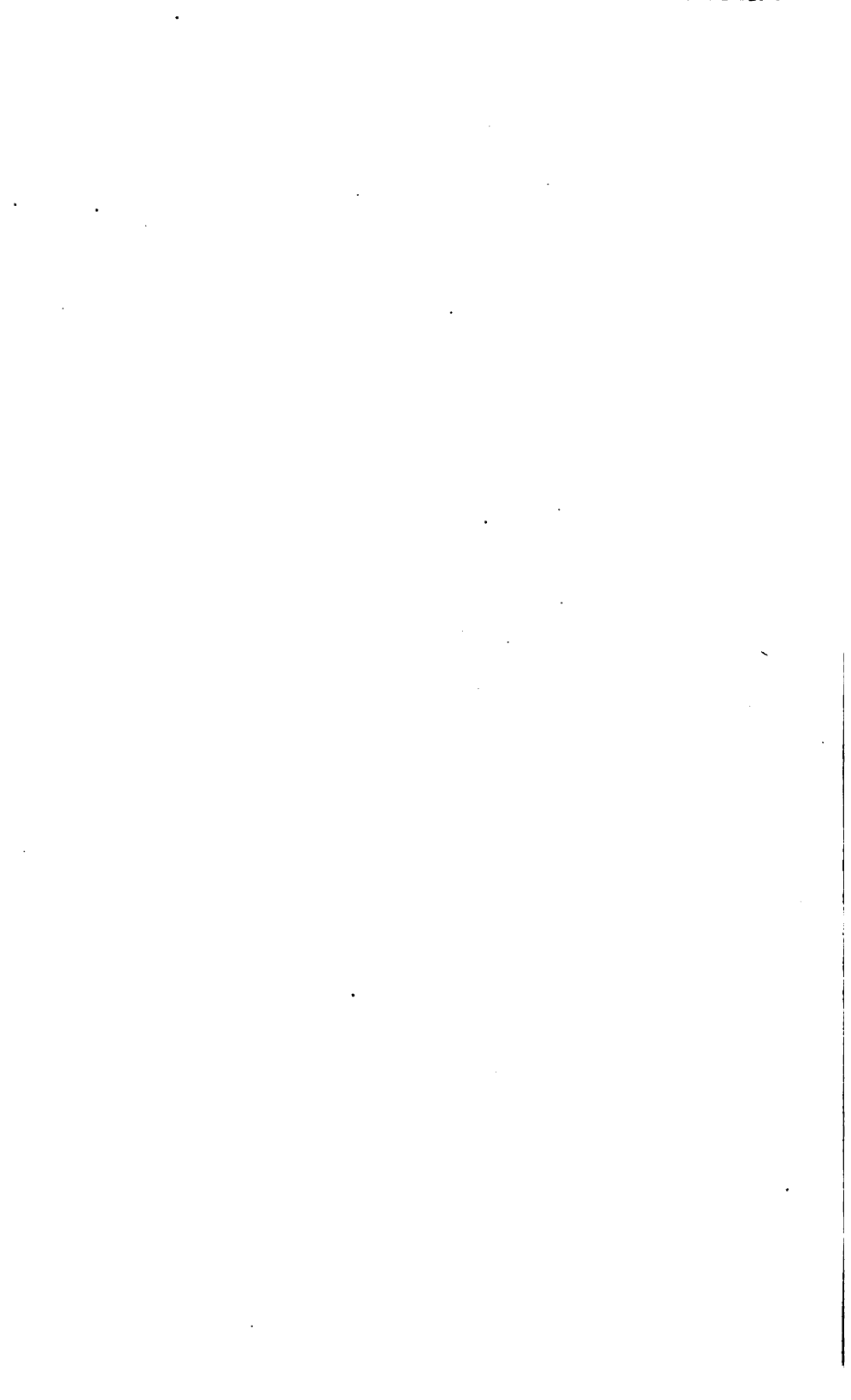
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OF THE
MEDICAL SCIENCES.

Vol. XXVI.

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Adapted from the

Journal of the

1847

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TO READERS AND CORRESPONDENTS.

A Report of the Cases treated in Wills' Hospital by the Editor, during the last quarter of 1839, will appear in the next No. It has been postponed to make room for the communications of our correspondents.

The following works have been received:—

Du Traitement Médical et Préservatif de la Pierre et de la Gravelle avec un Mémoire sur les calculs de Cystine. Par Le Docteur CIVIALE. Paris, 1840. (From the Author.)

An Inquiry concerning the Diseases and Functions of the Brain, the Spinal Cord and the Nerves. By AMARIAH BRIGHAM, M. D. New York, 1840.— (From the Author.)

An Introductory Lecture on the Anatomy, Physiology and Diseases of the Eye, delivered at the Birmingham Royal School of Medicine and Surgery, Oct. 4, 1839. By RICHARD MIDDLEMORE, Surgeon to the Birmingham Eye Infirmary. London, 1839. (From the Author.)

An Essay on the subject of Yellow Fever, intended to prove its Transmissibility. By B. B. STROBEL, M. D., late Physician to the Charleston Marine Hospital. "Audi alteram partem." Charleston, 1840. (From the Author.)

Memoranda for Practitioners in Midwifery. By EDWARD RIGBY, M. D., &c. &c. First American Edition, with Additions, by S. C. FOSTER, M. D., Licentiate of the Dublin Lying-in Hospital, &c. New York, 1840. (From J. G. Auner.)

Annual Announcement of the Medical Department of Transylvania University, containing the Circular for the ensuing Session, the Catalogue of Pupils, and the Graduating Class for 1839-40; and the Valedictory delivered to the Graduates on the day of Commencement. (From Prof. T. D. Mitchell.)

Valedictory Address to the Graduates of the Medical Department of Pennsylvania College. By WM. RUSH, M. D., Prof. of Theory and Practice of Medicine. Philadelphia, 1840. (From the Committee of the Graduates.)

Catalogue of the Trustees, Officers and Students of the University of Pennsylvania. Philadelphia, 1840. (From the Dean of the Faculty.)

Catalogue of the Officers and Students of the Medical College of the State of South Carolina, 1839-40. (From Prof. Dickson.)

Seventh Annual Report of the Trustees of the State Lunatic Hospital at Worcester. Dec. 1839. Boston, 1840. (From L. Shattuck, Esq.)

Second Medical Report of the Western Lying-in Hospital and Dispensary, 31 Arran-Quay, from Nov. 1, 1836, to Dec. 31, 1837. By FLEETWOOD CHURCHILL, M. D., Physician-Accoucheur to the Hospital, and Lecturer on Midwifery, &c. in the Richmond School of Medicine. Dublin, 1838. (From the Author.)

Syllabus of a Course of Lectures on the Theory and Practice of Midwifery and on the Diseases of Women and Children, delivered in the Richmond Hospital School of Medicine. By FLEETWOOD CHURCHILL, M. D., Licentiate of the King's and Queen's College of Physicians, &c. &c. Dublin, 1836. (From the Author.)

On Uterine Leucorrhœa and Researches on Operative Midwifery. By the same. (From the Author.)

An Account of the Yellow Fever which appeared in the City of Galveston, Republic of Texas, in the Autumn of 1839, with Cases and Dissections. By ASHBEL SMITH, A. M., M. D., Ex-Surgeon General of the Texian Army. Galveston, 1839. (From the Author.)

Eleventh Annual Report of the Inspectors of the Eastern State Penitentiary of Pennsylvania. Philadelphia, 1840. (From Dr. Darrach.)

Report on the Condition of the Marine Hospital, with the number of Patients received, cured and died, from the 1st Nov. 1838, to 1st Nov. 1839. By B. B. STROBEL, M. D., Physician. Charleston, 1839. (From the Author.)

Spinal Irritation: its History, Diagnosis, Pathology and Treatment, illustrated by Cases. An Essay read before the New York Medical and Surgical Society, Nov. 1839. By JOHN H. GRISCOM, M. D. (From the N. Y. Journ. Med. and Surg.) New York, 1840. (From the Author.)

The Annual Address to the Candidates for Degrees and Licenses in the Medical Institution of Yale College, Jan. 21, 1840. By DYAR T. BRAINARD, M. D. Member of the Board of Examination. Published by request of the Class. New Haven, 1840. (From the Author.)

Catalogue of the Officers and Students of the Medical Institute of the city of Louisville, Jan. 1840. (From Prof. Short.)

Annual Report of the Internments in the city and county of New York, for the year 1839, with accompanying Remarks. Presented by WM. A. WALTERS, City Inspector. New York, 1840. (From Dr. C. A. Lee.)

Address to the Graduates of the Medical Institution of Geneva College, delivered Jan. 21, 1840. By THOMAS B. SPENCER, M. D., Prof. of the Institutes and Practice of Medicine. Published by request of the Graduates. Geneva, 1840. (From the Author.)

A Treatise on Scarlet Fever. By Dr. C. P. P. F. REIERSEN. New York, 1840. (From the Author.)

Revue Médicale de Paris, October, November, December, 1839. (In exchange.)

Bulletin Général de Thérapeutique Médicale et Chirurgicale, November, December, 1839. (In exchange.)

Journal de Médecine et de Chirurgie Pratiques, November, December, 1839, and January, 1840. (In exchange.)

Journal des Connaissances Médicales Pratiques et de Pharmacologie, November, December, 1839, and January, 1840. (In exchange.)

Journal des Connaissances Médico-Chirurgicales, November, December, 1839, and January, 1840. (In exchange.)

Gazette Médicale de Paris, November, December, 1839, and January, 1840. (In exchange.)

La Lancette Française, October, November, December, 1839. (In exchange.)

Journal de Pharmacie, December, 1839. (In exchange.)

Zeitschrift für die gesammte Medicin, &c. Herausgegeben von J. C. G. Fricke und F. W. Oppenheim, November, December, 1839. (In exchange.)

The Edinburgh Medical and Surgical Journal, January, 1840. (In exchange.)

The British and Foreign Medical Review, January, 1840. (In exchange.)

The Medico-Chirurgical Review, January, 1840. (In exchange.)

The London Medical Gazette, for November, December, 1839, and January, 1840. (In exchange.)

The Medical Examiner for February and March, 1840. (In exchange.)

The Western Journal of Medicine and Surgery, January, 1840. (In exchange.)

The Select Medical Library and Eclectic Journal of Medicine, February, March, and April, 1840. (In exchange.)

The Boston Medical and Surgical Journal, February, March, 1840. (In exchange.)

The American Medical Library and Intelligencer, February, March, and April, 1840. (In exchange.)

The Maryland Medical and Surgical Journal, January, 1840. (In exchange.)

The New York Journal of Medicine and Surgery, for April, 1840. (In exchange.)

The India Journal of Medical and Physical Science, June, August, September, October, and November, 1839. (In exchange.)

The India Review and Journal of Foreign Science and the Arts, September, 1839. (In exchange.)

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ERRATA.

Page 71, line 2 from bottom for 15654, read 16654.

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| " 73, " 19 | " | after "are" insert <i>often</i> . |
| " 77, " 12 | " | for "several" read <i>seized</i> . |
| " 85, " 7 | " | for "hand" read <i>head</i> . |
| " 85, " 24 | " | for . insert , |
| " 86, " 14 | " | for "cited" read <i>excited</i> . |

THE
AMERICAN JOURNAL
OF THE
MEDICAL SCIENCES.

ART. I.—Report of a Series of Experiments made by the Medical Faculty of Lancaster, upon the body of Henry Cobler Moselmann, executed in the Jail Yard of Lancaster County, Pa., on the 20th of December, 1839.

CONTEMPLATING a series of experiments, upon the body of Henry Cobler Moselmann, who was sentenced to be hung on the 20th of December, 1839, for the murder of Lazarus Zellerbach, Doctor Washington L. Atlee called upon Anthony E. Roberts, Esq., sheriff of Lancaster County, on the 30th of November, and received from that gentleman, for purposes of science, entire control over the body of the criminal after execution, and permission to make such arrangements as were desired, provided they did not include any direct violation of law.

In furtherance of this object, Dr. W. L. Atlee reviewed the experiments upon the body of Forster, by Aldani; on Clydesdale, by Dr. Ure; and on Williams, by Professors Mitchell and Horner. From these experiments, as reported, and from new suggestions which arose on examining them, a programme was prepared to guide us in our future operations.

The matter was now suggested respectively to Doctors John L. Atlee, Ely Parry and Frederick A. Mughlenberg, and a correspondence was opened between Drs. Atlee and several medical gentlemen of Philadelphia, for the purpose of securing the necessary apparatus, and also of inviting them to be present at the experiments.

A meeting of the medical gentlemen of Lancaster was now called at the office of Dr. J. L. Atlee, on the 11th of December, in order to combine the efforts of the faculty, and to mature all our plans in due time. The programme was laid before the meeting and duly considered, and among the suggestions not embraced in the catalogue of experiments, was one by Dr. George B. Kerfoot, that in instituting artificial respiration, the lungs should be inflated with oxygen gas.

At this meeting, the following committees were appointed to carry out the provisions of the programme, viz:—Doctors A. M. Cassidy and W. L. Atlee, to make the observations before death; F. A. Mughlenberg and Francis S. Burrowes, both

absent, during execution; John Miller and Henry E. Mughlenberg to institute artificial respiration; G. B. Kerfoot and J. L. Atlee to conduct the dissections; W. L. Atlee, Wm. B. Fahnestock and Charles Herist, absent, to manage the apparatus; E. Parry and Patrick Cassidy, to attend to the application of the galvanic poles; Wm. B. Fahnestock, to make the phrenological examination; and J. K. Neff and J. Augustus Ehler, medical student, to record the results of the experiments. The meeting now adjourned until the evening of the 17th of December.

Not receiving from Philadelphia any favorable reply respecting the apparatus, Dr. W. L. Atlee went there on the 15th of December, and received from the Medical Faculty of Pennsylvania College, the generous and unanimous offer of a new Galvanic battery, consisting of 200 pairs of Wollaston's plates. The programme being submitted to Professors George McClellan, W. R. Johnson, and J. K. Mitchell, the first named gentleman suggested our attention to the action of the penis, which suggestion was afterwards added to the programme, and the last gentleman, the use of nitrous oxide gas in artificial respiration. From further conversation with Professor Mitchell, Dr. Atlee was induced to arrange the order of the experiments somewhat differently, so as to complete most of the important experiments before the dissections were commenced.

On the evening of the 17th of December, the physicians assembled again, Doctors Samuel Haines and John Leonard being now present. The new arrangement of the experiments was now adopted, and all matters arranged, preparatory to the meeting in the prison on the day of the execution; after which the meeting adjourned.

On Friday, the 20th of December, the following gentlemen, in addition to those above mentioned, met in the Lancaster prison, viz:—Prof. W. R. Johnson and J. K. Mitchell, Doctor W. Poyntell Johnston, and Messrs. Van Buren, Kerr, Weir and Lang, medical students from Philadelphia; Doctor Coates of Chester Co.; Doctors Bitner and Dare of Lancaster Co., and Dr. Abr. Carpenter, and Messrs. Carpenter, Landis, Kauffman, Cameron, Lenher, and Hostettor, medical students of Lancaster.

Doctor Haines having been appointed moderator, the following additional arrangements were made. Professor Mitchell and Dr. W. L. Atlee were added to the committee to make observations upon the scaffold; Dr. Johnston was added to the committee on dissections; Professor Johnson and Dr. W. L. Atlee were appointed to collect the expressed air after execution; Mr. Wise, aeronaut, to take charge of the lever of the battery; Professor Johnson and Messrs. Cameron and Hostettor, to experiment with the electro-magnet; Messrs. Landis, Cauffman, Carpenter and Haldeman, to conduct the electrical experiments; and Professor Mitchell and Dr. J. L. Atlee, to institute the experiments of Doctors Pennock and Moore.

This introduction, although not essentially connected with the experiments, will show that the whole matter was carefully matured, by a proper and deliberate organization of medical men, and, in consequence, will give character to the series of experiments, strengthen confidence in the correctness of the report, add weight to the evidences of facts, value to the inferences deduced from them, and will go far in establishing them as truths in science.

The experiments, which follow, are given in connection with the programme, as being the most simple, concise, and satisfactory arrangement I could adopt in drawing up the report.

EXPERIMENTS BEFORE EXECUTION.

PROGRAMME I.—*Collect a portion of expired air before execution, and secure it well in a glass-stoppered bottle.*

Experiment.—Thursday, December 19th, at 11 o'clock, A.M., Doctors Washington L. Atlee and George B. Kerfoot collected sixteen ounces in bulk

of expired air in two eight ounce vials, and secured them well with cork, sealing-wax, and soaked bladder.

PROG. II.—Examine the general condition of the body.

Exp. 1.—Thursday, at 11 o'clock A. M., the general condition of the body good, and with the exception of a short white fur upon the tongue, and a slight pain in the head, in perfect health.

Exp. 2.—Friday, December 20th, at 1 o'clock P. M., Doctors John L. Atlee and Kerfoot report the general condition of the body in apparent health, excepting a similar appearance of the tongue.

Note.—Cobler's health before this period was somewhat variable. Dr. Kerfoot says that he prescribed for him in two attacks of intermittent fever before his trial in August last, and Dr. A. M. Cassidy also reports that at this period of his confinement he was troubled with an eruptive disease. After his conviction, Dr. Cassidy visited him in several attacks of disease in the right side of his chest, the cause of which he could trace to large quantities of indigestible and stimulating ingesta. Cobler informed him that he had for several years been subject to eruptions of the skin, and also had repeated attacks of inflammation in the right side.

The jailer says that, until his conviction, Cobler was kept on the ordinary allowance of the prison, with permission to range through the buildings and yard, and that after conviction he was confined in irons to the floor of his room, and allowed to indulge freely in the use of Dutch wine, beer, and the grossest diet.

PROG. III.—Take the temperature of the body, and the air surrounding it.

Exp.—Friday, 1 o'clock P. M. The temperature of the body, taken in the mouth, 82° Fahrenheit. Temperature of the room, 70° 5'.

Note.—This experiment is imperfect in consequence of the bulb of the thermometer having been removed from the mouth before the mercury ceased to rise. The tube was attached to a metallic scale, which, evidently producing a disagreeable taste, was soon removed.

PROG. IV.—Examine the state of the pulse.

Exp. 1.—Thursday, 11 o'clock A. M. His pulse, examined after the above air was collected, and while he was in a sitting posture, was 80 in a minute. Upon standing up immediately afterwards, it was 117 in a minute. Natural in every respect except its great excitability from motion.

Exp. 2.—Friday, 1 P. M. Pulse varying from 80 to 90; 80 at perfect rest, 90 after coughing.

PROG. V.—Examine the action of the heart and respiratory organs by stethoscope and other means.

Exp. 1.—Thursday, 11 A. M. The pulsations of the heart were distinguished by the ear in the whole præcordial region; impulse slight but distinct; sounds of the heart distinct and audible; rhythm perfect.

Sounds, by percussion on the anterior part of the chest, natural and healthy.

Soon after sitting down the number of respirations were 21 in a minute, and their action natural.

Exp. 2.—Friday, 1 P. M. First and second sounds natural; impulse weak and quick; respiration natural.

EXPERIMENTS DURING EXECUTION.

PROG. I.—*Observe closely the action of the body in the agonies of death.*

Exp.—Friday, December 20th, at seventeen minutes past 2 o'clock, P. M. the drop fell. Two or three successive emprosthotonoid efforts of the body were the only motions observed. These spasms were confined to the muscles on the anterior part of the body, from the pelvis up, and they gave a gently swinging motion to the body.

Three minutes after execution there was a slight spasmodic action, which was the last perceived.

PROG. II.—*Take the temperature of the body and the air surrounding it.*

Exp.—Fifteen minutes after 2 o'clock P. M. the temperature of the air was 33° Fahrenheit.

Note.—The thermometer was influenced, in some degree, by the reflection of the sun from the prison walls. Nine minutes after execution the temperature of the body, near the axilla, was 85° Fahrenheit.

PROG. III.—*Examine the state of the pulse.*

Exp.—Dr. Francis Burrowes reporting, and Dr. Frederick A. Mughlenberg recording the results:

3 minutes after execution, pulse 144 in a minute.

3½ " " " " 120 "

4 " " " " 120 "

5 " " " " 150 "

6 " " " " 150 " and scarcely perceptible.

6½ " " " " 155 "

7 " " " " 155 "

8 " " " " imperceptible.

8½ " " " " there is no pulse at the wrist.

The following are results recorded also by Dr. J. K. Neff:

4 minutes after execution, pulse 120 in a minute.

5 " " " " 150 "

PROG. IV.—*Examine the action of the heart and respiratory organs.*

Exp.—Professor J. K. Mitchell, of Philadelphia, reporting, and Dr. J. K. Neff recording results:

4 minutes after execution, sound of the heart obscure, rythm perfect.

4½ " " " " heart less confused.

5 minutes after execution, the pulsations of the heart are so frequent, that they cannot be counted.

5½ " " " the sounds of the heart are scarcely audible, and the pulsations very frequent.

7	"	"	"	pulsations of the heart 120 in a minute.
7½	"	"	"	" " 132 "
10	"	"	"	" " 60 "
10½	"	"	"	more sound than percussion of the heart.
10¾	"	"	"	pulsations of the heart 60 in a minute.
11	"	"	"	distinct as to sound, and no percussion.
12	"	"	"	pulsations of the heart 54 in a minute.
12½	"	"	"	nothing audible.
13	"	"	"	sound entirely gone.

The following are results recorded also by Dr. F. A. Mughlenberg:

7	"	"	"	pulsations of the heart 120 in a minute.
7½	"	"	"	" " 132 "
10	"	"	"	" " 60 "
10½	"	"	"	" " 60 "
12	"	"	"	" " 54 "
12½	"	"	"	no audible sound.

PROG. V.—*Observe the action of the penis.*

Exp.—There was an ejection of fluid from the urethra, but no priapism.

Note.—Before commencing the observations during the execution, the watches of the several reporters were compared.

EXPERIMENTS AFTER EXECUTION.

PROG. I.—*Immediately on cutting down the body, and before loosening the noose, perforate the trachea with a large trochar; then withdraw the trochar, insert a gum elastic tube within the remaining canula, draw off a portion of air contained within the lungs, and secure it as before.*

Exp.—The body was taken from the scaffold, placed in a coffin, and conveyed to a room in the prison. It was then taken out of the coffin and placed upon a table insulated by wax, the noose remaining tight.

Thirty-three minutes after execution Dr. J. L. Atlee perforated the trachea, and upon withdrawing the trochar, air rushed out through the canula. Professor W. R. Johnson and Dr. W. L. Atlee now collected twelve ounces in bulk of expressed air. About sixteen ounces of air in all were pressed from the chest. The air was collected in two eight ounce vials, corked and sealed with some water in them.

Note.—In collecting the air, both before and after execution, the same tube was used, and the full of it, in both instances, of atmospheric air, or at least a mixture of it and the breath passed over into the vials in company with the air from the lungs.

PROG. II.—*Relax the noose, and convey the body to the place selected for further experiment.*

Exp.—Forty minutes after execution the noose was divided, and the body shifted to a more favourable position.

PROG. III.—*Attach a bellows to the loose end of the tube, or use Pennock's apparatus to establish artificial respiration, and continue it during the progress of the following experiments:*

Exp.—Forty-five minutes after execution, Doctors John Miller and Henry E. Mughlenberg commenced the use of Pennock's apparatus, but in consequence of the canula, into which the tube was inserted, being straight, and striking perpendicularly against the posterior wall of the trachea, artificial respiration was very imperfectly kept up. There was merely an inflation of the lungs by the bellows, without any corresponding egress of air upon compressing the chest.

PROG. IV.—*Simultaneously with artificial respiration commence the galvanic experiments with flat poles, taking notes of time and temperature repeatedly.*

Note.—So soon as the galvanic experiments were commenced, the compression of the chest in artificial respiration was abandoned; the inflation of the lungs by the bellows was continued during the few first experiments, and the apparatus afterwards removed.

GALVANIC EXPERIMENTS BEFORE DISSECTION.

PROG. I.—*Place the positive pole on the left side of the neck, and the negative pole under the left seventh rib, and also at times on the right, varying the positions of both poles without destroying their contact with the skin.*

Exp. 1.—Forty-seven and a-half minutes after execution. Doctors Patrick Cassidy and Ely Parry having the two poles of the battery applied, the positive upon the left side of the neck, and the negative under the left seventh rib. Professor Johnson threw the fluid upon the plates, which was immediately followed by a spasmodic action of the muscles supplied by the respiratory nerves.

Exp. 2.—Forty-eight minutes after execution, the positive pole being retained upon the neck, Professor Mitchell took hold of the negative pole and applied it to the epigastrium, breaking the circuit frequently by patting the skin with the pole. This produced a violent action of the pectoral muscles, and established the respiratory action, producing audible sounds of breathing, with corresponding motions of the mouth, opening and closing regularly.

Exp. 3.—Fifty minutes after execution, the positive pole being retained, the negative pole was passed along the linea alba down to the pubis. As the pole descended, the respiratory action became stronger and stronger,

and when below the umbilicus it became very powerful, particularly the expiratory efforts. The action of the respiratory organs was general, and air passed in and out of the lungs regularly. The mouth being closed, and a lighted candle held to the nose, the flame was blown out with force. This was repeated five times in quick succession. The candle could not be extinguished so long as the pole was applied above the umbilicus, but so soon as the skin was patted below the umbilicus, these marked results took place. There were regular inspirations and expirations, the flame of the candle passing in and out, so as to singe the hair in the nostrils.

Exp. 4.—Fifty-seven minutes after execution. The positive pole being retained, the negative was removed to the anterior part of the left thigh. Applied to the upper third of the thigh, the same phenomena occurred as in experiment 3d, accompanied with still stronger expiration; but below that point the respiratory muscles did not act well.

Note.—The foregoing experiments were made with the whole force of the battery. The 5th, 6th and 7th experiments, which follow, were made by detaching the pole at the negative end of the battery, and diminishing and increasing the power, by carrying it along the plates.

Exp. 5.—The positive pole being retained, and the negative placed under the left 7th rib, contractions of the muscles of the left side and face followed.

Exp. 6.—The positive pole was placed upon the right side of the neck, and the negative upon the abdomen, producing strong contractions of the muscles of the face, and of the pectoralis major.

Exp. 7.—One hour and one minute after execution. The 6th experiment having been repeated, it was ascertained that the muscular contractions commenced at the 23d pair of plates, and that as the force of the battery was increased, the action of the muscles became stronger. The motion extended to the arm.

PROG. II.—*Retain the positive pole on the left side of the neck, and shift the negative to the left iliac region.*

Exp. 1.—One hour and four minutes after execution. The whole force of the battery now being employed, there followed contraction of the muscles of the left thigh.

Exp. 2.—The positive pole being retained, the negative was placed upon the right iliac region, and produced contraction of the muscles of the right thigh.

PROG. III.—*Retain the positive pole, and shift the negative to the great gluteal muscle over the sciatic nerve.*

Exp. 1.—One hour nine minutes after execution. The muscles contracted strongly and threw the thigh outwards.

Exp. 2.—The negative pole being shifted to the internal surface of the thigh, there was a slight contraction of the triceps adductor femoris.

PROG. IV.—*Retain the positive pole, and shift the negative to the left knee.*

Exp.—One hour fourteen minutes after execution. Contraction of the muscles upon the anterior part of the thigh.

PROG. V.—*Shift the negative pole to the left heel.*

Exp.—Not tried.

PROG. VI.—*Place the positive pole on the forehead, over the supra orbital nerve, and the negative on the left side of the chest.*

Exp.—One hour twenty minutes after execution. All the muscles of the face were thrown into violent action; the angles of the mouth were drawn up, the eyelids closed with a tremulous motion; the occipito-frontalis muscle was drawn down and put into action, giving motion to the scalp.

Note.—In the contraction of the muscles of the face, in no instance was there an expression of passion, but merely a distortion of the countenance, which Professor Mitchell significantly termed *grimace*.

PROG. VII.—*Retain the positive pole, and shift the negative to successive spots on the arms.*

Exp 1.—The negative pole being placed on the skin over the biceps flexor cubiti of the left arm, the flexor muscles acted strongly; raising the arm to the chest.

Exp. 2.—The negative pole, placed over the triceps extensor cubiti and upon the outside of the forearm, caused strong contractions in the extensor muscles of the wrist, with the corresponding motion of the hand.

Exp. 3.—The negative pole placed upon the front of the forearm, produced strong flexion of the arm, and threw the hand upon the chest.

Exp. 4.—The position of the negative pole being frequently varied, and applied in quick succession to different spots, produced various movements of the hand and arm. The extensor and flexor muscles of the hand and fingers being stimulated in quick succession, gave a variety of rapid movements to the hand and fingers, sometimes clenching them, sometimes extending them, and sometimes acting on the index finger alone, giving a position to the hand resembling pointing. During the action of these muscles, the muscles of the face contracted slightly.

Note.—In the clenching of the hand, above mentioned, the first phalanx of the fingers was extended, while the two terminal phalanges were flexed upon it.

PROG. VIII.—*Retain the positive pole and shift the negative to different parts of the face.*

Exp.—One hour and twenty-eight minutes after execution. Irregular action of the lower jaw, masseters acted strongly, compression and closing of the mouth, temporal muscles and orbiculares palpebrarum contracted firmly. When the negative pole was applied to the nose, the muscles of the face acted generally.

PROG. IX.—*Place the positive pole on the back of the neck, and run the negative along the leg.*

Exp.—One hour twenty-nine and a half minutes after execution. The negative pole being carried along the spine, the muscles of the back contracted. Placed upon the gluteal muscles, they acted powerfully, throwing the leg outwards. Placed upon the posterior part of the thigh, the foot was raised, and the leg flexed upon the thigh. Placed upon the calf of the leg, the soleus and gastrocnemii contracted with great power, throwing up the tendo Achillis forcibly and extending the foot.

PROG. X.—*Retain the positive pole, and shift the negative to the forehead and parts of the face.*

Exp.—Those muscles of the face used in mastication were thrown into action, and simulated chewing. There was also a grinding motion of the jaw, and a motion of the lips as in tasting.

PROG. XI.—*Retain the positive pole, and shift the negative to the ham over the sciatic nerve.*

Exp.—The foot was raised, the leg flexed upon the thigh, and the foot extended.

PROG. XII.—*Place the positive pole upon the epigastrium, and the negative upon the neck.*

Exp.—The scapular muscles, all the muscles of the shoulder, and the serratus magnus were excited.

PROG. XIII.—*Repeat the few first experiments with points, and with the electro-magnet, and electrical battery, and if results should follow, repeat the whole.*

Note.—This was postponed to a subsequent stage of the experiments.

GALVANIC EXPERIMENTS AFTER DISSECTION.

PROG. I.—*Place the positive pole on the bed of the left par vagum and sympathetic nerves, and the negative in an incision below the cartilage of the left seventhth rib, and to the parts heretofore touched, exposing them all by the knife, using the flat poles.*

Exp. 1.—One hour and thirty-four minutes after execution. The dissections were conducted by Doctors Kerfoot and J. L. Atlee, and the parts being exposed, the poles were applied, but no results followed.

Exp. 2.—The two poles now being shifted from the dissected parts to the sound skin over the same parts on the other side, there were also no results.

Note.—The flat poles were now removed, and replaced by leaden points insulated both by oiled silk and glass.

Exp. 3.—The *descendens noni* being in view, it was insulated upon the handle of the knife. The positive pole being applied to it, and the negative in the incision at the seventh rib, there were also no results.

Note.—The failure of these three experiments appearing extraordinary, the cause was looked for, and the plates of the battery were observed not to be immersed.

Proc. II.—*Retain the negative pole in the incision under the seventh rib, and shift the positive upon the phrenic nerve exposed.*

Note.—The exposure of this nerve by dissection, having been deferred until many of the other experiments were completed; and a desire being expressed that the autopsy should be conducted by day-light, a want of time prevented this experiment from being tried.

Proc. III.—*Retain the negative pole, and shift the positive on the par vagum insulated.*

Exp. 1.—The plates being immersed, the negative pole was placed upon the epigastrium, and the positive as directed in the programme. Here followed slight contractions of the muscles of the face, of the side, and of the intercostal muscles.

Note.—In applying the positive point to the insulated par vagum in the above experiments, a spark immediately ran off upon the nerve, producing an audible and a visible crisping of the nerve, with a rapid evolution of steam.

Exp. 2.—The negative pole being detached from one end of the battery and run along the plates, the above experiment was repeated. The results were similar to those which followed the same management of the negative pole in a former experiment.

Proc. IV.—*Retain the negative pole in the incision below the seventh rib, and shift the positive upon the sympathetic nerve insulated.*

Exp.—Not tried.

Proc. V.—*Retain the negative pole, and shift the positive upon the phrenic nerve insulated.*

Exp.—Not tried.

Note.—The nerves upon the right side of the neck, now being exposed by dissection, the two following experiments were tried with the points.

Exp. 1.—The positive pole was placed upon the right spinal accessory nerve, and the negative upon the epigastrium, and no effects followed.

Exp. 2.—The negative being retained, the positive pole was placed upon the right descendens noni, and without any results.

Note.—The eight following experiments were not made in the order of the programme, nor with any reference to its directions. The points were now replaced by the flat poles.

Exp. 1.—One hour and thirty-seven minutes after execution, the positive pole being placed upon the forehead, and the negative on the epigastrium, there followed a slight motion of the right side of the face, and the masseters acted strongly.

Exp. 2.—The supra-orbital nerve now being exposed, above where it passes through the superciliary notch, and not insulated, the positive

pole was applied to it, and the negative to the epigastrium; the results were the same.

Exp. 3.—The positive pole was now placed upon the inner surface of the integuments of the forehead inverted, and the muscles of the face acted moderately.

Exp. 4.—The flap now being replaced, the positive pole was placed on its cuticular surface, and the same parts contracted more strongly.

Exp. 5.—The par vagum, on each side of the neck, now being divided, the positive pole was applied to the forehead, and the negative to the epigastrium, the results were the same as before the division.

Exp. 6.—The lower portion of the divided par vagum of the right side, being lifted out of its bed by the forceps, and the positive pole applied to the cut end of the nerve, there was a slight contraction of the muscles of the right side of the face.

Exp. 7.—The positive pole placed on the forehead, and the negative patted along the linea alba, down to the scrotum, produced slight contractions of the muscles upon the fore part of the body.

Exp. 8.—The positive pole being retained, and a point, substituted for the flat negative pole, being placed upon the epigastrium, no effects followed.

Exp. 9.—One hour and forty-one minutes after execution. The positive pole being retained, the flat negative pole was again brought upon the internal surface of the left arm. The effects were firm contraction of the hand, and the forearm drawn to a right angle with the arm.

Proc. VI.—*Expose the spinal marrow, by removing a portion of the atlas by bone forceps; place the positive pole on it, and the negative on the sciatic nerve, exposed beneath the great gluteal muscle.*

Note.—Nothing having been gained by insulating the nerves in previous experiments, it was considered unnecessary to expose the spinal marrow. The dissection, however, was prosecuted through the soft parts upon the back of the neck, for the purpose of passing the positive pole down to the spinal cord, just below the occiput. But upon probing with the finger the point where the atlas and dentata articulate, the dissectors discovered an unusual state of the parts, and which created some suspicion of dislocation. Considerable interest was excited in several of the medical gentlemen present, and the question of displacement not being settled, it was agreed to abandon that part of the neck for future examination, and to divide the spinal cord lower down.

Exp. 1.—The spinal marrow was now divided between the third and fourth cervical vertebræ, and the sciatic nerve of the right side exposed beneath the gluteus maximus. The flat poles still being attached, the positive was passed in between the bones down to the divided ends of the cord, and the negative was placed upon the sciatic nerve, the pole being

also in contact with the divided fibres of the muscle. Contractions of the gluteus maximus resulted.

Exp. 2.—The positive pole being retained, the negative was placed upon the skin over the great gluteal muscle, and this was followed by stronger contractions of the same parts.

Exp. 3.—The sciatic nerve was now insulated upon the handle of the knife, and the negative pole brought in contact with it. The effects were not so strong, and were more local.

Exp. 4.—The third experiment was repeated, observing how much of the pole came in contact with the nerve. Same results followed.

Exp. 5.—The same extent of the negative pole was now brought in contact with the adjacent skin, and the result was precisely the same as in Experiment 4.

PROG. VII.—*Expose the cerebrum and cerebellum. Place the positive pole upon the upper surface of the corpus callosum, and the negative to the lower limbs and other parts.*

PROG. VIII.—*Shift the positive pole to the posterior lobes of the cerebrum, and use the negative as before.*

PROG. IX.—*Shift the positive pole to the surface of the cerebellum, and the negative to the lower part of the back and to the penis.*

PROG. X.—*Expose the medulla oblongata. Place the positive pole on it, and the negative on the sciatic nerve.*

PROG. XI.—*Vary the position of the positive pole on parts of the medulla oblongata, and also vary the negative pole.*

Note.—The above five sections of the Programme were passed over for the same reason that prevented us from exposing the spinal marrow.

One hour and fifty-nine minutes after execution. Desiring to examine the appearance of the viscera by day-light, the experiments were suspended until the contents of the abdomen were examined. The post-mortem dissection for this purpose was conducted by Dr. W. Poyntell Johnston, a delegate from the Pathological Society of Philadelphia. The appearances will be given at another place, in the proper order of the programme.

PROG. XII.—*Expose the heart. Apply the positive pole to the incision in the neck, and the negative to the external surface of the heart. Should the heart act well in this, or any of the following experiments, repeat the experiments of Doctors Pennock and Moore on animals.*

Exp. 1.—The positive pole being placed in the incision on the neck, and the negative upon the external surface of the pericardium, the muscles of the face moved, and the eyes opened and shut repeatedly. No action of the heart observed.

Exp. 2.—The positive pole being placed upon the skin of the neck, and the negative retained, the same parts contracted, but with more force. No action of the heart.

Exp. 3.—Two hours sixteen minutes after execution. The pericardium

being opened, and the positive pole shifted to the right side of the face the negative was placed upon the external surface of the heart. The mouth contracted, but there was no action of the heart observed.

Exp. 4.—The positive poles being retained, the negative was placed upon the external surface of the left ventricle. No action of the heart.

PROG. XIII.—*Puncture the descending cava. Pass the negative wire insulated into the cavities of the right auricle and ventricle.*

Exp.—The pulmonary artery being punctured, and the leaden points attached, the negative point was passed into the right ventricle, and the positive placed upon the right side of the face. There followed a vermicular motion of the periphery of the right auricle.

PROG. XIV.—*Puncture the aorta. Pass the negative point into the left ventricle.*

Exp.—The same effects as in the last experiment.

PROG. XV.—*Reverse the poles.* *Exp.*—Not tried.

PROG. XVI.—*Place the positive pole upon the spinal marrow, and the negative in the heart.* *Exp.*—Not tried.

PROG. XVII.—*Place the positive pole on the cerebrum and cerebellum, and the negative in the heart.* *Exp.*—Not tried.

Note.—Not being able to establish the action of the heart at this stage of the programme, the experiments of Doctors Pennoek and Moore could not be repeated.

PROG. XVIII.—*Expose the abdominal viscera. Apply the positive pole to the sympathetic nerve in the neck, and the negative to the different viscera. Afterwards shift the positive to the several parts of the neck and head before touched.*

PROG. XIX.—*Shift the negative to the diaphragm.*

Note.—In consequence of the post mortem examination having been made, the 18th and 19th sections of the programme were abandoned.

PROG. XX.—*Expose the axillary plexus. Apply the positive pole to it, and the negative to the different parts of the arm and wrist.*

Exp.—Not tried.

Note.—Several of the experiments in the foregoing part of the programme were passed over for want of time.

PROG. XXI.—*Repeat the experiments with other poles and other apparatus.*

EXPERIMENTS WITH THE ELECTRICAL BATTERY.

Exp. 1.—Two hours and twenty-eight minutes after execution. The battery having been charged by Dr. W. E. Atlee, Mr. S. S. Haldeman applied the internal chain to the right side of the neck, and Mr. Henry Carpenter, student of medicine, applied the external chain to the right iliac region. The muscles on the anterior part of the right thigh contracted upon the accession of the spark.

Exp. 2.—The same experiment was repeated with the same results.

Exp. 3.—The internal chain was brought in contact with the right auricle of the heart, and the external with the apex of the heart. No contraction.

Exp. 4.—The same experiment was about being repeated, but the internal chain touched the right shoulder, and the shock passed in that direction. No contraction.

EXPERIMENTS WITH THE ELECTRO-MAGNET.

Exp. 1.—Two hours and thirty minutes after execution. Professor Johnson managed the machine, while Messrs. Cameron and Hostettor, medical students, applied the wires. One pole was applied to the right side of the face, and the other to the right iliac region. No results.

Exp. 2.—One pole was applied in front of the ear, and the other upon the forehead. No results.

AUTOPSY.

After the body was removed from the scaffold to the room in the prison, and the face uncovered, there was observed no distortion of the features, no protusion of the tongue, nor any marked congestion of the face.

One hour fifty-nine minutes after execution, Doctor Johnson commenced the examination of the abdominal viscera, and reported that on a superficial examination, the liver was enlarged and excessively congested, its convex surface having a marbled appearance, but otherwise healthy. The spleen was congested, and the intestines somewhat injected. In other respects all the abdominal viscera healthy.

The stomach was removed and examined; it was natural externally, contained about two ounces of fluid, the rugæ internally were very large but healthy, and the size of the stomach rather small.

The liver being cut into, black blood ran out; it was excessively engorged with black blood; a small piece, taken into the hand and squeezed, the blood passed out as from a saturated sponge.

Dr. Johnson also examined the fluid ejected from the urethra. This was done immediately after stripping the body and before the experiments commenced. The fluid was mucous, holding a few salts in solution, and containing no spermatic animalculæ. The examination was made by Wollaston's Microscopic Doublet.

As connected with the post-mortem appearances, although not examined with any pathological view, it may be observed that the pericardium contained about two drachms of fluid; the heart was of natural size and colour, and flaccid, containing no blood in any of its cavities.

In the right cavity of the chest, there were firm adhesions between the two layers of the pleura. In the left cavity none existed. The lungs were apparently healthy.

Upon puncturing the trachea with the trochar, no blood issued from the

wound or from the canula. Nor was there any when the lungs were inflated by the bellows. So soon, however, as the respiratory action was established by the galvanic influence, there was a considerable discharge of frothy blood from the canula.

The jugular vein having been accidentally cut while seeking for the par vagum, a large quantity of blood was discharged from it.

Immediately after dividing the spinal marrow, there run out about four ounces of serous fluid, followed by an immense discharge of blood, which continued to flow for a considerable time after.

With regard to the dislocation of the neck, Doctors Fahnestock and Kerfoot, who made the examination subsequently, reported that they discovered no dislocation of the cervical vertebræ; no rupture of the transverse ligament; no fracture of the processus dentatus, and consequently there had been no displacement.

PHRENOLOGICAL DEVELOPMENTS.

The following report, drawn up by Dr. Fahnestock, and presented to a meeting of the physicians of Lancaster, was unanimously adopted, and ordered to be inserted into this part of the general report, viz:—

Age, his own statement, 21.—Supposed to be 28 or 30. *Temperament*—Bilious Lymphatic. *Size*—About five feet ten inches. *Figure*—Very broad, strong, and muscular. *Eyes*—Dark brown. *Hair*—Black.

TAPE MEASUREMENTS—Of the Head, the Hair being removed.

	Inches.	Inches.
Circumference of the head around Philoprogenitiveness, Secretiveness, and Individuality, - - - Scalp 23.		Skull 21.5
Circumference of the head around Philoprogenitiveness, Secretiveness, and Eventuality, - - -	22.5	21.

CALLIPER MEASUREMENTS.

From Occipital Spine to Individuality, - - -	8.	7.7
From Philoprogenitiveness to Individuality, - - -	7.9	7.6
From Self Esteem to Individuality, - - -	7.2	6.8
From Ear to Individuality, - - -	4.8	4.6
From Ear to Eventuality, - - -	4.9	4.7
“ Comparison - - -	5.	4.8
“ Benevolence, - - -	5.4	5.
“ Reverence, - - -	5.4	5.
“ Firmness, - - -	5.6	5.1 full.
“ Self Esteem, - - -	5.5	5.1
“ Inhabitiveness, - - -	5.4	4.8
“ Philoprogenitiveness, - - -	5.	4.7
“ Amativeness, - - -	4.6	4.4
From Cautiousness to Cautiousness, - - -	5.7	5.4
From Ideality to Ideality, - - -	5.3	4.8
From Constructiveness to Constructiveness, - - -	5.4	4.5

		Inches.	Inches.
From Destructiveness to Destructiveness,	- - - Scalp	6.1	Skull 5.6 full.
From Secretiveness to Secretiveness,	- - -	6.1	5.6 full.
From Aquisitiveness to Aquisitiveness,	- - -	5.9	5.4
From Combativeness to Combativeness,	- - -	5.6	5.3
From Alimentiveness to Alimentiveness,	- - -	5.9	5.1

CRANIOMETER MEASUREMENTS.

From the Ear, or Medulla Oblongata, to Alimentiveness,	3.4	2.7
" " Destructiveness,	3.4	3.
" " Amativeness, -	3.9 full.	3.8
" " Philoprogenitiveness,	4.4	4.2
" " Adhesiveness,	4.3	4.
" " Inhabitiveness,	4.6	4.4
" " Combativeness,	3.8	3.6
" " Secretiveness,	3.7	3.4
" " Acquisitiveness,	4.1	3.9
" " Constructiveness,	3.7	3.
" " Cautiousness,	4.4	4.2
" " Approbateness,	4.7 full.	4.5
" " Self Esteem,	4.9	4.7
" " Benevolence,	4.9	4.6
" " Reverence,	4.9 full.	4.6
" " Firmness,	5.1	4.8
" " Conscientiousness,	4.8	4.5
" " Hope,	4.8	4.5
" " Marvellousness,	4.5	4.3
" " Ideality,	4.	3.8
" " Mirthfulness,	4.3	4.1
" " Imitation,	4.7	4.4
" " Individuality,	4.3 full.	4.2
" " Configuration,	3.6 full.	3.5
" " Size,	4.3	4.
" " Weight,	4.2 full.	4.1
" " Colouring,	4.3	4.1
" " Locality,	4.5	4.2
" " Order,	4.3	4. full.
" " Calculation,	4.	3.9
" " Eventuality,	4.5	4.3
" " Time,	4.3	4.1
" " Tune,	4.	3.4
" " Language,		
" " Comparison,	4.7	4.5
" " Causality,	4.6 full.	4.4

Organ of Language, moderate.

" Love of Life, large.

The calliper measurements from the Occipital Spine to Individuality, Philoprogenitiveness to Individuality, Self Esteem to Individuality, and all the succeeding admeasurements from the ear to the organs which follow, together with those of the craniometer over the same points, were made to

the centre of the front, top, and back parts of the head. The rest were taken to the centre of each organ, alike with both instruments.

The measurements over the scalp and skull differ very little, except over the organs of Benevolence, Reverence, Firmness, Self Esteem, Inhabitiveness, Philoprogenitiveness, Constructiveness, and Alimentiveness, where the integuments were unusually thick.

The skull is of moderate thickness, except in the regions of Destructiveness, Secretiveness, Alimentiveness, Cautiousness, Combaticiveness, Causality, Imitation, Self Esteem, Amativeness, Love of Life, and the site of Tune, where it is very thin, and if a lighted taper be introduced into the skull, it is quite transparent over the above organs, whilst all the rest are dark, particularly over the regions of Reverence, Benevolence, Conscientiousness, Hope, Marvellousness, Ideality, Constructiveness, Approbateness, Inhabitiveness, Adhesiveness, and Philoprogenitiveness.

These, I believe, are all the essential facts connected with his developments, and as this paper is to accompany those of the experiments upon his body, I have refrained from any remarks upon his character, and shall close my report by stating that the measurements were taken in the presence of Dr. G. B. Kerfoot, to whom I am much indebted for many favours, and the free access which I at all times had to pursue my phrenological investigations.

I am, Gentlemen, yours very respectfully,

WILLIAM B. FAHNESTOCK.

To the Physicians of the City of Lancaster.

CHEMICAL ANALYSIS OF THE BREATH.

Portions of air collected before and after execution were transmitted to Philadelphia for analysis. The following is an extract of a letter received from Professor W. R. Johnson, containing the results of his analysis, viz.

Med. Depart. Pennsylvania College, Philad. Jan. 7, 1840.

DR. WASHINGTON L. ATLEE,

DEAR SIR: I have received the two vials containing portions of the breath of Cobler, collected before and after execution respectively, and have submitted them to such examinations as the nature of the case seemed to require, in order to demonstrate the relative degrees of deterioration which they had suffered from the action of the lungs.

In conformity with this purpose, I have sought to ascertain the relative proportions of oxygen, azote, and carbonic acid found in the two samples.

1. The contents of the two vials were first placed in suitable receptacles over mercury, and subjected to the desiccating action of chloride of calcium for eighteen hours.

2. The air was next examined for carbonic acid, when it was found by exposure to pure potassa that the portion collected before execution lost 2.609 per cent. of its bulk by absorption of the potassa, while that taken from the lungs after execution lost 7.7 per cent.

3. The next step was to ascertain the proportion of oxygen and azote in the remainder thus freed from carbonic acid. For this purpose the method of detonating with hydrogen was employed. By three several trials on the breath taken before execution, I obtained a mean of 18.33 per cent. of the compound of oxygen

and azote for the proportion of the former ingredients, which is 17.84 per cent. of the original bulk of air before the carbonic acid had been separated.

4. Deducing, by difference, the quantity of azote, the breath collected before execution, appeared to be composed of

Oxygen	17.84	parts
Azote	79.551	"
Carbonic Acid	2.609	"

100.

5. Three several attempts were made with breath collected after execution, to produce a detonation with hydrogen, but though the proportions of the hydrogen and air were varied to a great extent, no combination whatever could be effected.

6. A portion of this air was next heated in contact with clean phosphorus, but though the latter was melted, and continued for several minutes in fusion, at a temperature which would inevitably have inflamed it, had oxygen been present, yet no signs of combustion were exhibited.

Though these trials had convinced me that the breath taken after execution was wholly destitute of oxygen, yet I did not omit that very delicate test, furnished by the binoxide of nitrogen. A portion of this gas was therefore brought in contact with the air, but on several repetitions not the slightest change of colour was found.

7. We are therefore warranted in the conclusion, that the air drawn from the trachea before loosening the noose, is composed of

Carbonic Acid	7.7
Azote	92.3

100.

Hence it should seem that the portion of carbonic acid left in the air after strangulation, is not nearly the equivalent of the oxygen of pure atmospheric air.

I remain very respectfully, your ob't serv't.

WALTER R. JOHNSON.

The following are the detailed results of an analysis made by Dr. Washington L. Atlee, of Lancaster, on portions of the breath taken from the same bottles which contained those in the above analysis of Professor Johnson.

To the Medical Faculty of Lancaster,

GENTLEMEN:—I herewith present to you my analysis of the breath of Cobler, both before and after execution.

BREATH AFTER EXECUTION.—1. I subjected 120 volumes of the breath collected after execution to the action of freshly fused chloride of calcium, for twenty hours over mercury, but observing moisture still adhering to the sides of the tube, I did not consider the air properly desiccated, and determined to make the necessary correction for vapour.

2. I now prepared a stick of pure alcholic potassa from the vegetable caustic of commerce, and immediately after its consolidation, I placed it moistened within the air in the tube. The mercury in the Fahrenheit's thermometer stood at 53°, and in the barometer 29.70 inches. After several hours had elapsed, the potassa was replaced by a fresh portion, and was not withdrawn until after the expiration of 24 hours; 115 volumes remained in the tube, the thermometer standing at 62° F., and barometer 29.54. Now, making the necessary corrections for temperature, atmospheric pressure, and aqueous vapour, the original bulk of the air would be 123.419877 volumes, and consequently the number of volumes absorbed by the potassa, would be 8.419877, which in the 100 parts, would make the proportion of 6.82214 volumes.

The amount of carbonic acid gas, therefore, existing in 100 parts of the breath collected after execution, agreeably to the above results, would be 6.82214 volumes.

The air thus deprived of its carbonic acid, was now subjected to a qualitative analysis for the purpose of detecting the presence of oxygen gas.

3. A piece of potassium being introduced, its metallic lustre soon disappeared, and it became encrusted with white. After remaining in the air $4\frac{1}{2}$ hours, I removed it, and found it converted to a protoxide, excepting the central nucleus which preserved its metallic character.

4. A piece of clean phosphorus was now passed into the same gas, and subjected to the heat of a spirit lamp. The phosphorus was fused, and kept in that condition for some moments. There was no ignition, but the fused phosphorus emitted a thin white vapour, and as the heat was not sufficient to volatilize the phosphorus, this effect must have proceeded from its union with oxygen.

Having been convinced by these results, that the breath collected after execution contained an appreciable portion of oxygen gas, I now took another portion of the breath, in order to subject it to the quantitative analysis.

5. For this purpose, I made use of Hare's aqueous sliding rod hydro-oxygen eudiometer and calorimotor, both constructed by Mason, of Philadelphia. Four successive trials were made with different proportions of hydrogen, and although in no instance was there any explosion or detonation perceptible, yet in every instance, there followed a diminution of bulk in the air contained within the eudiometer. The following are the respective experiments, viz.:

Experiment First.—Breath 100 volumes; hydrogen gas 10; after ignition $3\frac{1}{2}$ volumes consumed.

Exp. Second.—Breath 100 volumes; hydrogen gas 15; after ignition 3 volumes consumed.

Exp. Third.—Breath 100 volumes; hydrogen gas 20; after ignition 3 volumes consumed.

Exp. Fourth.—Breath 100 volumes; hydrogen gas 30; after ignition $3\frac{1}{2}$ volumes consumed.

Now, taking the average of these four experiments, as the correct result, there would be a condensation of 3.20833 volumes of the mixture, which would give 1.06944 volumes as the proportion for oxygen gas.

The amount of oxygen gas, therefore, existing in 100 parts of the breath, collected after execution, agreeably to the foregoing results, would be 1.06944 volumes.

6. Having derived the quantities of carbonic acid and oxygen gases by direct experiment, it is fairly inferred that the balance of the breath is nitrogen.

As, therefore, the remaining air would amount to 92.10842 volumes, I am authorized by the above analysis, in stating, that the breath collected after execution, is constituted of

Carbonic acid gas	6.82214 parts
Oxygen gas	1.06944 "
Nitrogen gas	92.10842 "

100.

BREATH BEFORE EXECUTION.—1. 103 volumes of the breath collected before execution, was placed over water, the thermometer standing at 63° F., and the barometer 29.44. A stick of clean phosphorus was introduced and permitted to remain for 12 hours. This was now exchanged for a fresh portion, and finding, at the expiration of 26 hours, that absorption had ceased for several hours, I fused the phosphorus without producing ignition or the evolution of white fumes, and then removed it. 91 volumes remained in the tube, the thermometer at $68^{\circ} 5'$ and barometer at 29.34. Now making the corrections for temperature, atmospheric pressure, and aqueous vapour, the original bulk of the gas would be 104.140552 volumes, and deducting $\frac{1}{40}$ th of the bulk of the remaining 91 volumes for the vapour of phosphorus, which would reduce the air in the tube to 88.725 volumes, the number of volumes absorbed would be 15.415552, which in the 100 parts would make the proportion of 14.80168 volumes.

The amount of oxygen gas, therefore, existing in 100 parts of the breath before execution, according to the above results, would be 14.80168 volumes.

84 volumes of the air thus deprived of its oxygen, were now placed over mercury in order to ascertain the quantity of carbonic acid gas. Thermometer 68° ,

barometer 29.27, and column of mercury within the tube, 2 7-10 inches above the surface of the mercury outside the tube.

2. It was now subjected to the action of alcoholic potassa, as in the previous analysis, for 17 hours. It was then removed, and a solution of it was permitted to float above the mercury in contact with the air for 8 days longer. There now remained 80 volumes in the tube. Thermometer 63°, barometer 29.503 and column of mercury in the tube 3 1-10 inches above the surface outside. The corrections being made for temperature, barometric pressure, and aqueous vapour would reduce the original bulk of air to 82.010933 volumes, which would make a difference of .2010933 inches in the height of the mercurial column in the tube, before and after the experiment, and the necessary correction for this would reduce the 80 volumes remaining in the tube to 79.450377 volumes, which deducted from the above original bulk as corrected, will give the true amount absorbed by the potassa, or 2.560556 volumes. Now the proportion for 100 parts would be 3.129213 volumes.

The amount of carbonic acid gas, therefore, existing in 100 parts of the breath before execution, according to the above analysis, would be 3.129213 volumes.

3. In order to test the correctness of the quantitative analysis of the breath for oxygen gas, by means of the phosphorus, I next made five successive trials with Hare's eudiometer on fresh portions of the breath, varying the proportions of the mixture each time, as follows, viz.:

Experiment First.—Breath 100 volumes; hydrogen gas 60; after ignition 49 volumes consumed.

Exp. Second.—Breath 100 volumes; hydrogen gas 65; after ignition 50½ volumes consumed.

Exp. Third.—Breath 100 volumes; hydrogen gas 75; after ignition 41½ volumes consumed.

Exp. Fourth.—Breath 125 volumes; hydrogen gas 75; after ignition 50½ volumes consumed.

Exp. Fifth.—Breath 110 volumes; hydrogen gas 65; after ignition 47½ volumes consumed.

Now taking the average of the results of these five experiments, there would be a condensation of 44.92182 volumes of the mixture, which would give 14.97394 volumes as the proportion for oxygen gas. This result, I consider, as a remarkable approximation to the analysis by phosphorus, and comes far within the limits of the errors of observations. Taking now the average of the six separate analyses as the correct number, the amount of oxygen gas, existing in 100 parts of the breath collected before execution, would be 14.94523 volumes.

4. The amount of carbonic acid and oxygen gases being known, the balance of the breath is put down as nitrogen.

As, therefore, the remaining air would amount to 81.932557 volumes, the results of my analysis of the breath before execution would be as follows, viz.:

Carbonic acid gas	3.129213 parts
Oxygen gas	14.945230 "
Nitrogen gas	81.932557 "

100.

In connection with the chemical analysis, it is proper to observe that the criminal had been confined for a considerable time in a close apartment, heated by an anthracite fire, and that the breath before execution was collected from him while in this apartment. It may also be stated, that both the air collected before and after execution, was confined in bottles containing water. How far these circumstances may have affected the relative proportions of the constituents, it would be impossible now to determine, and yet they should be taken into the account in reviewing the above analysis.

I would also observe, that in prosecuting this analysis, a tube, graduated for a rain gauge, was employed, and that I contemplated repeating it with a regular eudiometer, but was disappointed in procuring one. I, however, submit it to your consideration, conscious of having given to the subject my utmost care.

Yours respectfully,

WASHINGTON L. ATLEE, M. D.

APPARATUS EMPLOYED IN THE EXPERIMENTS.

Galvanic Battery.—The galvanic battery was procured for the occasion from the Pennsylvania Medical College, Philadelphia. It possessed considerable power, and was composed of 200 pairs of Wollaston's plates, and constructed on Professor Hare's plan of double trough and lever. The fluid used for exciting it, was composed of about 40 parts of water, and one part of sulphuric acid. The poles of the battery, were made of very thick leaden wire, soldered to strips of amalgamated copper at one end, upon which the axle of the trough rested, while the other, and free ends, were soldered to small hand vices insulated. Within these vices, we could attach pointed or flattened terminal poles at pleasure. The pointed poles were made of lead, and the flat poles of pieces of sheet copper, six inches long and two wide. A saturated solution of sal ammoniac was employed to wet the skin with.

Electrical Machine.—This was a plate machine, two feet in diameter, and procured from the Lancaster Conservatory of Arts and Sciences. It is perfectly insulated upon glass pillars, and acts well.

Electrical Battery.—This battery is composed of three very large jars, placed in a truncated triangular tin box, and is coated with 3174 square inches of tin foil. The room being crowded for a long time before the electrical experiments were made, of course the battery could not be charged so strongly as in a perfectly dry atmosphere.

Electro-Magnet.—This machine became disordered just before the experiments commenced, and could not be repaired in time to enable us to secure its full force.

Table.—The table on which the body was laid, was a long box well insulated upon four stands of wax. During the galvanic experiments, however, the insulation could not be sustained, in consequence of the crowd pressing in against the table. In the electrical experiments this was satisfactorily secured.

Agreeably to an adjournment announced at the Lancaster prison, on Friday evening, a meeting of the physicians of Lancaster, was held at the house of Dr. Jno. P. Atlee, on Tuesday evening, December 24th, 1839, for the purpose of comparing the notes of the gentlemen who recorded the results. The notes having been carefully revised, corrected, and unanimously adopted, Doctors Washington L. Atlee and Wm. B. Fahnestock were appointed a committee to draw up a report to present to a future meeting for consideration.

Dr. W. L. Atlee offered the following preamble and resolutions, which were unanimously adopted, viz.:

Whereas, Anthony E. Roberts, Esq., sheriff of Lancaster County, having politely permitted the Medical Faculty of Lancaster, to institute a course of valuable experiments upon the body of Henry Cobler Moselmann, and having cordially consented to every arrangement necessary to their successful performance, not inconsistent with the due execution of the laws, Therefore be it unanimously

Resolved, That the thanks of the medical profession, and of men of science generally, are due to the sheriff of Lancaster county, for the facilities afforded by him in performing on the 20th instant a series of most valuable experiments on the body of the criminal Cobler.

Resolved, That medical and general science has been aided by the successful execution of the above experiments, and that executors of the laws in capital

punishment, would be promoting useful knowledge by imitating the commendable example of the present sheriff of Lancaster county.

Resolved, That such a disposition of the body, by adding to our knowledge of the human system, would, in addition to the penalty of the law, be affording one of the best means of making restitution to society for the crimes of a murderer.

Resolved, That the medical gentlemen present at the execution of Cobler, return their thanks to Anthony E. Roberts, Esq., and cannot refrain from expressing their admiration of the firmness, humanity, and strict regard for the laws, exhibited by him in the solemn and painful discharge of his duty.

Resolved, That a copy of the above resolutions be handed to the sheriff of Lancaster county.

Drs. W. L. Atlee and John Miller, were appointed a committee to wait upon the sheriff with a copy of the foregoing resolutions.

Dr. John L. Atlee offered the following, viz.:

Resolved, That the thanks of the physicians of the city of Lancaster, be presented to Dr. Casper W. Pennock of Philadelphia, for his liberality in forwarding for their use his apparatus for artificial respiration, and for ascertaining the causes of the sounds of the heart.

Resolved, That the thanks of the physicians of the city of Lancaster, be presented to the Medical Faculty of Pennsylvania Medical College, for their very generous loan of the galvanic battery of that institution, and more especially to Prof. W. R. Johnson, for the efficient aid rendered by him in the performance of the experiments.

Dr. J. L. Atlee was appointed to communicate the above resolutions.

I have now, gentlemen, concluded that part of the report, which, by a mutual arrangement of the committee, was allotted to me. Careful not to add or omit any thing contained in the original notes, which could in any way affect the character of the experiments as reported and recorded upon the spot, and equally careful to avoid the expression of an opinion respecting the experiments, and making deductions from them, I have given you nothing more nor less than the naked facts themselves. However prolific in valuable truths the experiments may be, it is better to place them before the scientific world just as they are, than attempt to enlighten, or perhaps obscure them by any premature opinions. In this way they will be open to all, and the whole profession, including ourselves, can draw such inferences, and cull such truths as the experiments may warrant.

With many thanks for the honour you have conferred upon me, in placing me upon this committee,

I am, gentlemen, very respectfully, your obed't serv't,

WASHINGTON L. ATLEE, M. D.

To the Physicians of the city of Lancaster.

Lancaster, January 17, 1840.

The above report having been submitted to a meeting of the Medical gentlemen of Lancaster, held at the house of Dr. E. Parry, it was unanimously adopted, and ordered to be offered to the editor of the American Journal of the Medical Sciences for publication.

ART. II.—*Statistical Account of the Cases of Amputation performed at the Pennsylvania Hospital from January 1, 1838 to Jan. 1, 1840.* By G. W. NORRIS, M. D., one of the Surgeons to the Institution.

In the Number of this Journal for August, 1838, I gave a statistical account of the cases of amputation performed in the Pennsylvania Hospital from the 1st of January, 1830, to the 1st of January, 1838. During the last two years an unusual number of amputations have occurred with us, and I herewith subjoin a tabular account of them, in continuation of that which has already been given. At the time of publishing my former tables, I expressed regret at being unable to procure accurate statements from any other large hospital in this country, wherewith our success in amputation might be compared, and am still sorry to find that but little attention is given to this matter. The subject of the mortality, after these very common operations, is, however, beginning to attract notice abroad. For a long time past, Mr. Benjamin Phillips, of London, has had his attention directed particularly to it, and at about the same time that my paper was written, published an interesting essay in regard to it in the *London Medical Gazette*, June 9, 1838. The amputations included in the inquiry of Mr. Phillips, are those of the arm, fore-arm, thigh, and leg, all of which were performed in civil hospitals and in the private practice of hospital surgeons. The number of cases collected by him is 640, embracing all cases, acute, chronic, and the results of violence which occurred in the practice of the persons by whom the returns were furnished within the period of four years. "Of these cases, 490 are reported cured, and 150 died, either in consequence of the operation or the progress of the disease, to rescue the patient from which, recourse was had to the operation. I apprehend, adds Mr. P., that a large number of our professional brethren are unprepared for such a result; I have only met with very few who were at all sensible of the extent of the mortality which occurs."

As in England, most of our brethren in this country are totally unaware of the mortality which occurs after these operations, and some of our surgeons, who are in the habit of giving the results of their practice from recollection alone, have received these statements with astonishment, and speak of their own success as being far greater than that shown by the statistical researches of Mr. Phillips, or furnished by the institution in which we have observed. That the success of amputations is greater in small towns and country practice, or even in the private practice of large cities, I firmly believe. In the small hospitals of cities, too, in which but a few surgical patients are collected together, the success after amputations may probably be greater than with us, though, in order to arrive at any thing like a true average of the mortality attendant upon these operations in any one institution,

observations carried through a series of years will be necessary. This necessity of extending any observations that may be made through a term of years, is strikingly shown by an inspection of the tables which I have made; in some years the mortality after these operations being very small, while in others, though a similar class of cases have come under notice, and been subjected in every way to similar influences and treatment, the mortality has been large. From the 1st of January, 1830, to the 1st of January, 1832, but one death took place out of eleven amputations made during that period, while from the 1st of January, 1832, to the 1st of January, 1834, one-half of those amputated died (seven out of fourteen), and in the next succeeding two years the mortality became still greater, eight out of fifteen terminating fatally. From 1836 to 1838 the mortality then strikingly decreased, the loss being only one-third (five out of fifteen), and by the accompanying table it will be seen that, from the 1st of January, 1838, to the 1st of January, 1840, there has been but a single death out of twenty-four amputations, seventeen successive operations having had a favourable termination. To assert that death after amputation is rare with us, would be warranted by the experience of the past two years, though undoubtedly it would be as far from giving a true idea of the danger of the operation, or of our average success, as to aver our ordinary results to be such as were had between the years 1834 and 1836.

I am myself inclined to the belief that the operations performed during the ten years past, will give a fair idea of the average success of the capital amputations had in the Pennsylvania Hospital, and as the principles laid down for the performance of them, dressings, class of patients, &c., are nearly the same in all our larger cities, believe that it will be found to be near the true average of mortality after this class of operations, in the large public institutions in this country, and in such belief must continue, until their better success is shown by carefully prepared tabular statements of *all* their amputations, in place of the random guesses and vague recollections which are now brought forward in opposition to tabular statements, by the gentlemen differing from me in opinion.

In the following table, all those amputations in which the operation was performed within twenty-four hours after admission, are included under the head of immediate, the patient in such cases having been brought to the house soon after the receipt of his injury. With one exception, the common circular operation was performed, and the stumps were all dressed so as to procure union by the first intention. The ordinary mode of dressing, is first to bring the flaps together by means of three or four long strips of adhesive plaster, and after covering the lips of the wound with lint spread with cerate, to apply a small cushion of charpie over the extremity of the stump, and to secure the whole with a bandage moderately tight. The first dressing was generally made on the third or fourth day, and repeated daily afterwards till cicatrization was complete.

Table of the Cases of Amputation performed at the Pennsylvania Hospital, from January 1, 1838, to January 1, 1840.

No.	Admission.	Name.	Age.	Disease or Injury.	Part Amputated.	Immediate or otherwise.	Result.	Period of Discharge or Death.	Date of Amputation.
1	1837. October 14,	David Lewis, C.*	26	Caries of ankle joint.	Leg.		Cured.	1838. March 17,	1838. January 24,
2	December 30,	Peter Caraher.	20	Caries of knee joint.	Thigh.		Cured.	April 11,	February 28,
3	1838. April 10,	Hugh Frise.	31	Compound fracture of elbow.	Arm.		Cured.	July 16,	April 11,
4	March 29,	Samuel Nightingale.	16	Gun-shot wound of elbow.	Arm.		Cured.	July 21,	April 25,
5	August 14,	Samuel Jackson.	39	Lacerated hand and arm.	Arm.		Cured.	October 31,	September 12,
6	September 14,	Isaac Wheter.	40	Compound fracture of leg.	Leg.		Cured.	December 10,	October 6,
7	October 22,	Peter McChogan.	66	Comp. disloc. of ankle and lacer. foot.	Leg.	Immediate.	Cured.	December 10,	
8	October 2,	Samuel Clark.	32	Compound fracture of knee.	Thigh.		Cured.	December 12,	November 7,
9	December 3,	James Boem.	12	Lacerated and fractured arm.	Arm.	Immediate.	Cured.	1839. February 16,	December 5,
10	November 30,	Robert Harris.†	34	Inflamed leg.	Thigh.		Cured.	March 20,	
11	1839. January 16,	Mason Matlack.	14	Comp. disloc. and fracture of ankle.	Leg.	Immediate.	Cured.	March 29,	1839. February 13,
12	January 4,	Anthony Segue.	48	Lacerated hand.	Fore-arm.		Cured.	April 10,	February 16,
13	February 4,	John Fitzsimmons.	50	Wounded hand.	Fore-arm.		Cured.	April 6,	
14	March 25,	James Chapman.	62	Comp. fracture and lacerated arm.	Arm.	Immediate.	Cured.	April 16,	
15	May 23,	Joseph Holland.	40	Lacerated foot.	Foot (partial).	Immediate.	Died.	July 23,	
16	June 11,	Henry Rowland.	43	Compound fract. and lacerated foot.	Leg.	Immediate.	Cured.	September 7,	
17	July 4,	James O'Brien.	60	Lacerated and fractured foot.	Leg.	Immediate.	Cured.	September 18,	
18	July 13,	Augustus Fall.	5	Lacerated and fractured foot.	Leg.	Immediate.	Cured.	September 22,	
19	July 30,	John Brown.	49	Compound fracture of leg.	Leg.	Immediate.	Cured.	October 5,	
20	August 2,	Charles Stricker.	23	Hand torn off by machinery.	Fore-arm.	Immediate.	Cured.	August 24,	
21	August 27,	John Scanlin.	33	Comp. fract. of arm, and other injuries.	Arm.	Immediate.	Cured.	October 10,	August 31,
22	September 1,	David Gallagher.	25	Lacerated and fractured foot.	Leg.	Immediate.	Cured.	Feb. 19, 1840,	October 2,
23	September 23,	Catharine Cooper.	47	Osteo-sarcoma of foot.	Leg.		Cured.	December 17,	October 16,
24	September 7,	James Russel.	33	Diseased knee.	Thigh.		Cured.	December 23,	

* Coloured.

+ This operation was performed at the request of the patient, the limb being so deformed and ankylosed as to prevent him from pursuing his business (mail-making), which he stated he could easily do were it removed. The stump sloughed, and the bone protruded, after the operation, and a re-amputation was made on the 30th of February, 1839.

In adding the results furnished in the above tables to those given in the Number of this Journal already referred to, for the eight years previously, we arrive at the following results:

Of eighty amputations on 79 patients, performed during a term of ten years at the Pennsylvania Hospital, thirty-five were primary, of which twenty-four were cured and eleven died, four of the deaths occurring within the twenty-four hours immediately following it.

Twenty were secondary, of which thirteen were cured and seven died.

Twenty-five* were for the cure of chronic affections, of which twenty were cured and four died.

Thirty-two of the amputations were of the upper extremity, of which twenty-seven were cured and five died.

Forty-seven were of the lower extremity, of which thirty-one were cured and sixteen died.

Seven were amputations at the joints, of which four were cured and three died.

13 of the 79 operated on,	were under 20 years of age,	of whom 12 were cured and 1 died.
26	were between 20 and 30,	of whom 19 were cured and 7 died.
22	were between 30 and 40,	of whom 15 were cured and 7 died.
16	were between 40 and 50,	of whom 9 were cured and 7 died.
2	were upwards of 50,	of whom 2 were cured.
<hr/> 79		<hr/> 57 <hr/> 22

The conclusions to be drawn from an analysis of the two tables which I have now published are,

1. That amputation† with us is to be regarded as an operation attended with much danger to the life of the individual, the mortality after it being 1 in $3\frac{1}{11}$.

2. That the chances of success after it are much greater in persons who have been for some time suffering from chronic diseases, than in those who have it done while enjoying robust health, the mortality in the former class of cases being 1 in $6\frac{1}{2}$, while in the latter it is 1 in $3\frac{2}{11}$.

3. That immediate amputations after injuries are less fatal than secondary operations, the mortality after the former being 1 in $3\frac{2}{11}$, while in the latter it is 1 in $2\frac{1}{2}$.

4. That amputation of the lower extremity is much more fatal than that of the superior member, the mortality after the former being 1 in $2\frac{1}{2}$, while in the last mentioned class of cases it is only 1 in $6\frac{1}{2}$, and

5. That the danger increases with the age of the individual operated on.

* One double.

† The *great* amputations only, it will be recollected, are alluded to. No death has followed any of the amputations of fingers, or toes, which have been made in the hospital during the ten years past.

ART. III.—*Case of Absence of the Uterus in an Adult Female, with Remarks.* By SAMUEL CHEW, M. D., of Baltimore.

I WAS requested, in January last to prescribe for R. H., an unmarried woman of about 22 years of age, who represented herself to be suffering from amenorrhœa. She stated that she had never menstruated, but that for several years past she had every month experienced the symptoms which are in many women the usual precursors of menstruation. She was annoyed at these seasons by headache, nausea, an uneasy tension of the breasts, pain in the back, and a sensation of fulness about the pelvis and lower part of the abdomen. These indications of indisposition, never violent, but yet troublesome by their frequency of recurrence, continued generally for three or four days, and then gradually terminated without any excretion from the vagina, or a vicarious discharge from any other organ. She had never labored under any inflammation or painful affection of the sexual organs. Her general health, strength, and spirits had been uniformly good. Her countenance was marked by a feminine expression, her mammæ were large and their glands fully developed, her hips broad, and her whole appearance that of a well formed, healthy female.

From the regular occurrence of the catamenial effort, I concluded that there was no defect in the structure or functions of the ovaria. That the uterine secretion was not, after being formed, prevented from escaping by an obliteration of the os tincæ, an imperforate hymen, or any other occlusion of the vagina, was evinced by the fact of the abdomen being entirely free from any abnormal distension.

Under these circumstances, it appeared probable that the amenorrhœa depended upon some irregularity of formation, or morbid condition of the uterus. An examination was proposed, to which the patient consented. The external parts were of the natural form and size. The vagina, of the ordinary capacity in other respects, terminated abruptly, and without any previous diminution of its calibre, about an inch and a half above its orifice. The substance by which it was closed seemed to the touch—and to the eye when it was subsequently examined by means of a speculum—to be a continuation of the walls of the organ, and possessed about the same degree of firmness and density. After a deliberate and very careful exploration, I was fully satisfied, that nature had in this case deviated from her usual plan, and produced a female in whom neither a uterus, nor any remnant or trace of that organ was discoverable. Aware of the infrequency of such a deficiency, and desirous to prevent doubts in the minds of others respecting the nature of this case, I sent the patient to the venerable Dr. Chatard, with a request that he would examine her. This gentleman who has so long stood preeminent in Baltimore as the unrivalled corypheus of obstetrical science, was unable by a most accurate investigation to find any vestiges of a

uterus, and was convinced that the organ was wholly wanting. The woman was afterwards examined with great care, and with the same result, by my friend Dr. Cohen, and on another occasion by Dr. J. M. Smith, by neither of whom was the least doubt entertained respecting her condition.

The mode of examination resorted to, was the following: A catheter being passed into the bladder and a finger into the vagina, they were brought as nearly into contact as the coats of the two organs would allow. In this manner it was easily ascertained that nothing was interposed between the lower part of the bladder and the anterior wall and upper extremity of the vagina. A similar investigation was made on the other side of the vagina: a finger of the left hand introduced into this organ, and one of the right into the rectum, were brought together as nearly as possible, along the posterior surface of the vagina, around its closed termination and between its anterior wall and the bladder. Finally, with a catheter in the bladder and a finger in the rectum the whole intervening space, both directly in the median line of the body and as extensively as possible on each side, was thoroughly explored.

The result of these researches was, not only that no uterus could be felt, but that the vagina terminated where it was closed, having no perceptible continuation of any description extending upwards into the pelvis.

No tumour could be discovered in the hypogastrium. In examining this region, the woman was directed to breathe deeply, and the opportunity was seized of pressing the hand upon the abdomen during the ensuing expiration.

The patient, on being questioned, admitted that she was very far from being deficient in sexual appetency. Cum viro semel (sic narrat) congressa est, et non sine voluptate vivida: amplexus tales, pietate monita, ut plurimum refugit, sed somniis amatoris sæpenumero fruitur.

The facts which I have stated appear, in the first place, to prove conclusively, that in the subject of this case the ovaria are present and efficient; and secondly, to make it highly probable, if not absolutely certain, that the uterus is wanting.

The presence and activity of the ovaria are sufficiently manifested by the regular occurrence of the catamenial excitement, and by the sensation of sexual appetite.

That the venereal impulse depends upon the ovaria, we learn, both from comparative physiology which shows us that in the lower animals desire is extinguished by the loss of those glands, and also from the accounts of various human females who have had them originally deficient, or been deprived of them by surgical operations. From this latter source, we derive the farther information, that in those who have been born without ovaria neither the catamenial secretion, nor any effort to accomplish that secretion, has ever been observed; and that such as have lost their ovaries after attaining adult age, have uniformly ceased to menstruate, however regular they may previously have been in the performance of the monthly function. By

the subjects of these cases, where the malformation is congenital, many of the peculiar anatomical and physiological characteristics of womanhood are never acquired; and where the dismemberment has happened later in life, they are in a great degree speedily lost. In the *Transactions of the Royal Society*, a case is related by Mr. Pears, of a woman, in whom upon dissection, the ovaria were found to be so indistinct as rather to show the rudiments which ought to have formed them, than any part of their natural structure. This female, who died at the age of twenty-nine years, had never menstruated. Her os tincæ and uterus, with the fallopian tubes which were pervious to their fimbriæ, were found to have the usual form, but had never increased beyond their size in the infant state. Her breadth was fourteen inches across the shoulders, and only nine inches across the pelvis; her breasts and nipples had never enlarged more than in the male subject, there was no hair upon the pubes, nor had there been any indications of puberty either in mind or body; on the contrary, she always expressed aversion to young men who were too familiar with her.* In the well known case stated by Mr. Pott, the woman whose ovaria he removed, though she continued to enjoy good health, became thinner, and apparently more muscular; her breasts, which had previously been large, entirely subsided, and she never menstruated after the operation. In these instances, and in all others of a similar nature with which I am acquainted, the want of ovaria has been followed by consequences very widely different from any thing observed in the appearance, or reported of the functions of the person whose case I have detailed, and I am, therefore, induced to believe, that she labors under no parallel deficiency of organization.

The question of the presence or absence of the uterus, may, perhaps, be considered somewhat more doubtful and more difficult of solution. To pronounce of the patient, before she has been subjected to such an anatomical examination as can only be made after death, that she is certainly destitute of a uterus, may possibly be deemed not perfectly warranted by the ascertained facts of the case.

To this scruple, it may be replied, in the first place that if there be a uterus, it is unquestionably in a very unusual location, and probably of a size exceedingly minute and rudimental; farther, that if it exist, it must be totally deficient in the natural powers and properties of the healthy organ, as is evident from the absence of the catamenial secretion, notwithstanding the regular recurrence of the monthly constitutional excitement, and lastly, that however extraordinary the malformation may be thought, there are on record some other well attested cases of females, whose symptoms during life were not dissimilar to those of the person who forms the subject of the present account, and who were found after death to be destitute of wombs, though their ovaries were large, well-formed and perfect.

* *Philosophical Transactions*, Vol. for 1805, p. 225.

These considerations appear to me to render one of two conclusions respecting this case, inevitable; either the patient has no uterus, or, if she has one, it is so undeveloped and imperfect as to produce no influence upon the rest of her organism. The former of these suppositions is in accordance with my own opinion, and with that of the other gentlemen by whom she was examined.

I have thought the preceding case not unworthy of notice, in reference to its bearing upon the physiology of menstruation, and upon the laws of teratology or the doctrine of monstrosities; and also because similar instances of structural imperfection are extremely rare on the records of medical experience, and have generally been related in a very imperfect and unsatisfactory manner.

The important advantages to be derived in the study of physiology from the examination of cases of anomalous organization have, since the beginning of the last century, been fully known and admitted. We learn the functions of an organ, not only by observing the part it performs when present in the system, but also by noting the consequences of its absence. The instance we have been considering renders it evident that the excitement and increased vitality of the sexual organs by which menstruation is preceded are not dependent, as was once supposed, upon any congestion or distension of the vessels of the uterus, or upon any other change in the condition of that organ. It also shows us, that the peculiar external characteristics of the female form, and the possession of sexual sensibility, are not at all owing to the uterus, and are in no way connected with its presence or development. Indeed, there can be no doubt, that the often quoted aphorism of Van Helmont—*propter solum uterum mulier est id quod est*—is perfectly erroneous, and that the distinguishing attributes of womanhood derive their origin not from the womb, but from the far more important energies of the ovaria.

Is it possible for pregnancy to take place in a female, destitute of a uterus but possessing ovaries and a vagina? The affirmative of this question might be consistently maintained by the advocates of what is called the sympathetic theory of generation, who believe that the semen masculinum never passes beyond the vagina, but being brought into contact with some portion of that tube, produces there its specific impression, which is transmitted to the ovarian vesicle by sympathy or consent of parts. The same opinion might, on a different ground, be entertained by those who agree with the late distinguished Professor of Midwifery in the University of Pennsylvania, that there is probably a more direct passage from the vagina to the ovaries than the one through the uterus and fallopian tubes.* An opposite conclusion

*It was supposed that this doctrine derived support from Dr. Gartner's discovery, in several of the lower animals, of two small interrupted canals running from the ovaries, along the broad ligaments and the cornua and body of the uterus, to open into the vagina by the sides of the urethra. The same canals had been previously seen by Malpighi, and appear to have been detected in the human subject by Madame Boivin. But the

will be embraced by those who recollect the experiments of Haighton and Blundell, by which it was shown that impregnation is uniformly prevented in rabbits, and probably in all other animals, by any interruption of the communication from the vulva to the ovaria, by means of division or ligature of the vagina, the fallopian tubes, or the neck of the womb.

Modern investigations in the obscure and difficult but most interesting study of embryology have proved, that irregularities in the structure of the body are not occasioned by any original vice or defect in the germ, as was once contended by Winslow, but arise accidentally during the growth of the new being, and in the early periods of its uterine existence. Cases of monstrosity from absence or imperfection of the uterus belong to Blumenbach's class of *monstra per defectum*, or anomalies which spring from arrest or suspension of development. Their occurrence appears to illustrate the truth of the theory of the eccentric or centripetal formation of the body, first advanced by M. Serres, and ably advocated by MM. Geoffroy and Isidore St. Hilaire. According to this view of the subject, which though not universally applicable is yet undoubtedly true to a very great extent, the growth of the organs commences on the surface and progresses thence towards the interior of the system. The azygous or single organs, which occupy a situation directly in the median line of the body, are formed by the expansion of two lateral halves, at first separate and distinct, but which gradually approach each other, and are finally united. If by any cause the development of the rudiments of these halves be prevented, the organ is not formed; if the process of growth be interrupted before the two sides have been brought into contact and union, malformation and imperfection are the consequence. As might be expected from the mode and period of their formation, it has been ascertained by observation, that these organs are much less constant than the lateral and superficial ones, and that they are frequently absent, imperfect, and malformed, when the parts nearer to the surface are present and well developed. The female sexual organs may be divided into three principal segments, the first consisting of the ovaries and their appendages, the second of the uterus, and the third of the clitoris and vulva. These segments are to a certain extent independent of each other, are nourished and supplied by different sets of vessels, and it is not uncommon to see one of them undergoing modifications in form and structure, or even ceasing to exist, without any effect being produced upon the others.* At the first appearance of the genital organs, which is not until the sixteenth week of gestation, the rudiments of the ovaria consist, according to Meckel, of two

researches of Rathke have shown them to be merely the remnants of two ducts, pervious in the embryo, and leading from the deciduous renal bodies the *Corpora Wolffiana*, which in all the higher vertebrates precede and form the first rudiments of the urinary and genital glands in the embryos of both sexes.

* See *Histoire générale et particulière des Anomalies de l'Organisation chez l'Homme et les Animaux*, &c. Par M. Isidore St. Hilaire: Paris, 1832-36.

elongated, narrow bodies, situated high out of the pelvis, and descending obliquely from without inwards, and from above downwards. Proceeding from above these, and extending on their outer side, are two long, attenuate canals, which uniting below compose the uterus and vagina, while their superior portion becomes expanded into fallopian tubes. After the process of growth has commenced in these rudimentary canals, and is advancing from the periphery towards the interior, should any cause arise to interrupt and obstruct the farther progress of development, the uterus, as the organ most deeply seated, will of course suffer most, and the parts of the vagina and tubes which are nearest to it will be more affected than those which are more remote. Thus the ovaries, the ovarian extremities of the tubes, and the lower portion of the vagina may be perfect, while the uterus and its immediate appendages are either extinct, or more or less deformed.

What are the agents capable of so affecting the embryo as to occasion monstrosity? Medical philosophers have never much delighted in acknowledging their ignorance of causes, and this question has consequently received very numerous and various responses. Original malformation of the germ, disease of the embryo, adhesions between it and its membranes, violent accidents happening to the mother during the early months of gestation, sudden and intense emotion of her mind, long continued anxiety, unnatural connections with brutes, cacodemons, and evil genii; are among the causes which have been assigned by different authorities. Of explanations embracing such suppositions, some are evidently absurd, and have been long since exploded and despised; others are conjectural and disputable; and others again can be applied only partially and in particular cases. Mr. Lawrence ascribes the aberrations from the usual form and structure of the body to irregular operations of the powers concerned in generation, and places them, with respect to their cause, on a level with unhealthy executions of the nutritive, secretory, and exhalent functions.* This view is unquestionably correct, but at the same time it is far too general to be satisfactory to the restless and impatient spirit of curiosity. The ancient notions of monstrosity arising from supernatural agencies are of course to be ranked among the *ineptæ et fabulosæ nugæ* of superstition, and there is no doubt that the causes which impress the embryo with deformity are as natural and physical as those which communicate pleurisy or rheumatism to the adult. But while it is generally easy enough to ascertain the occasions of those and many other diseases, or rather the conditions under which they occur, such is far from being the case with regard to monstrosities; and if the Baconian maxim be correct that "*vere scire est per causas scire*," I fear we shall have to confess, that respecting the true nature of a large proportion of anomalous formations we are as yet very profoundly ignorant.

Cases in which the uterus is wanting are, as I have already said, not at

* Medico-Chirurgical Transactions, vol. v. p. 165.

all numerous; but they are not altogether so rare as certain writers have supposed. M. Fournier, in the article "*Cas Rares*" of the *Dictionnaire des Sciences Médicales*, mentions an instance related by Lieutaud as the only one that appears on the records of medicine. "*Les annales de la science médicale ne nous offrent qu'un seul exemple d'une femme privée de matrice. Le cas de cette singulière observation est rapporté par Lieutaud. Il n'y avait chez le sujet nul vestige, aucun annexe de la matrice: le vagin était le seul qui existât; il se terminait supérieurement en cul-de-sac: cette disposition faisait que la femme ne pouvait remplir le devoir du mariage sans éprouver une douleur qui rendait le commerce de son mari insupportable.*"

Of this case, which as stated by Fournier is both in an anatomical and physiological point of view very incomplete and defective, it was not strictly correct to assert even in 1826 that it was the only one of its kind recorded, two at least having been noticed previously; and subsequently to that date several others have been reported.

Morgagni informs us, that Columbus, the distinguished anatomist of Cremona, dissected the body of a woman who was born without a uterus, and that a similar case had occurred to Fromondus, a celebrated fellow citizen of Columbus.* From two such instances having been met with in the same city, Morgagni infers that a proper examination would probably show that many other women present examples of the same deficiency, and that among those who have no menstrual effusion, absence of the uterus is much more frequent than has generally been suspected.

This illustrious author appears, however, to have been somewhat too ready to admit the existence of such an accident of structure. He recounts two cases that fell under his own observation, in which he was satisfied of its presence not by an examination per rectum, but simply by the fact that neither of the women had ever menstruated, and that the vagina in one of them had no external orifice, and in the other terminated after extending only a third part of its usual length.† His conclusion may have been correct enough, but his reasons for adopting it are certainly far from being valid.

A case in which the uterus was absent is related by Professor Cailliot, in the second volume of the *Memoirs of the Medical Society of Paris*. The patient had never menstruated, and yet enjoyed excellent health. She was deficient in none of the other characteristics of her sex, except that her breasts were small. A canal, between two and three lines in diameter, and about an inch in depth, occupied the place of the vagina, and terminated in a cul-de-sac. The most accurate examinations discovered nothing like a uterus. At the age of twenty-six or twenty-seven, this woman became subject to a pretty frequent evacuation of bloody urine, which recurred at irregular periods, and was perhaps intended to supply the place of the catamenia.

* De Sedibus et Causis Morborum, Epist. 46, Art. 13.

† Epist. 46. Art. 11, 12.

The following instance occurred under the observation of Dupuytren, and is reported by Breschet. Ag. Melassene, aged twenty-seven years, requested on the 24th of February, 1823, to be admitted into the Hotel Dieu, for a fistula in ano. She stated that she had never menstruated; that at certain periods she felt a heaviness in the head, flushings and heat of the face, and pains in the abdomen; all of which symptoms were uniformly removed by the application of leeches to the anus. The external genital parts appeared well formed; the pelvis was perhaps rather narrow, but the breasts were fully developed, and all the appearances announced the most perfect feminine conformation. The finger introduced into the vagina, was arrested, at about the depth of an inch, by a smooth round cul-de-sac, above which nothing could be felt indicative of the presence of a uterus. The patient was asked if she had ever felt any of the pleasures of love; she answered in the negative, but said that she had lived four years in a state of concubinage, and was then on the point of marrying. She was operated on for the fistula on the 28th of February, and died on the 15th of March, of acute inflammation of the liver. Upon examination after death, the vagina, about an inch in length, was found to terminate abruptly; behind it lay the rectum, above and behind the bladder were found the broad ligaments of the uterus, which contained within their substance fallopian tubes and ovaries well developed. There was no uterus to be found, but at the point of union of the fallopian tubes was discovered a small body, which neither presented a cavity, nor had in other respects the least resemblance to a womb.*

Dr. Macfarlane of Glasgow, relates the case of a woman who applied to him to be operated on for a defect of her vagina. She was twenty-eight years of age, her external organs were well formed and entire, her mammae large, and she was not deficient in sexual feeling. The orifice of the vagina was completely closed by a thick, firm muscular looking substance, continuous with the inner margin of the labia, and adhering to the pubes below and around the urethra, so as to leave not the least trace of an opening. The patient had been subject to severe attacks of epistaxis, since she was sixteen years old, to vertigo, flatulence, palpitations, pains in the lumbar region, vomiting and occasional diarrhoea. An operation was performed by Dr. Macfarlane, in February, 1823, with a view of opening a passage to the womb. The patient died of peritonitis. Upon examination of her body, the ovaria were found large and well shaped, and the fallopian tubes were each an inch and a quarter in length, their fimbriated extremities being perfect. There was no vestige of a uterus. In the normal situation of that organ, was a portion of condensed cellular substance, about the size of a filbert, more than an inch distant from the uterine extremities of the tubes, and loosely attached to the peritoneum.†

* Repert. d'Anatomie Pathologique, tome v, p. 99.

† Macfarlane's Clinical Reports of the Surgical Practice of the Royal Infirmary, Glasgow, 1832.

Mr. Kingdon, in 1826, stated to the London Medical Society a case of absence of the uterus which had occurred in his practice. He had availed himself of the assistance of Mr. Lawrence, and although, they had both made a most careful examination of the parts, with the aid of Weiss' speculum vaginæ, and had most cautiously investigated the case, no uterus could be detected. The vagina was about three inches in length. The upper part appeared to lie in contact with the rectum, and beyond it nothing could be felt. This patient had the usual female figure; but the breasts, although of a moderate size, appeared to be so rather from a state of general *embonpoint*, than from a development of their glandular structure.*

The anatomy of this case, if no means of exploration were resorted to save those which are mentioned, must be considered very dubious: respecting its physiology not a word is said.

M. Renauldin presented to the Academy of Medicine the genital organs of a woman, in whom the uterus was wanting. This person died at the age of fifty-two years; she was of very small size, had never menstruated, her breasts had never been developed, and her intellect was imperfect. The parts of generation externally were well formed, but a finger introduced into the vagina encountered, instead of the neck of the uterus, a small tubercle possessed of but little sensibility. Between the bladder and rectum, instead of a uterus, was a firm cord, about the size of a quill, communicating with the vagina, and also with the fallopian tubes. Some traces of ovaria were faintly perceptible. On slitting open the vagina and the cord-like canal above it, the first was found to be properly formed, and the last, which was only an inch in length, was evidently an imperfect neck of the uterus. The body and fundus of that organ were entirely deficient.†

A case of absence or imperfect development of the uterus, was observed during the past year, in the Hôpital de la Charité. Jeanne Française, forty-six years of age, was admitted into that institution in January, 1839, under the care of M. Rayer. She had never suffered from any severe or dangerous illness, but had been for many years subject to distressing headaches, and frequent anomalous pains in the stomach, and throat. When fifteen years of age, she had experienced the symptoms which usually announce the approach of the menstrual secretion; but neither then nor at any subsequent period of her life, was there any appearance of uterine discharge. She had had occasionally a sanguineous flux from the bowels, and once or twice had been affected with vomiting of blood. During the last twelve months, she had suffered much from hysterical dyspnoea, colic and diarrhoea, the stools being several times deeply tinged with blood. The mammae were well developed, with the nipples projecting and surrounded by areolæ. There was no hair in the axillæ or on the pubes. The external organs of generation, and the vagina were perfectly natural; but on examining this canal with the

* Lancet, vol. xi, p. 85.

† Archives Générales, tome x, p. 474.

finger, no traces of cervix or os uteri could be discovered; it seemed to terminate in a cul-de-sac. At the extremity of the passage, a firm roundish substance, of the size of a small walnut, could be felt through the lining mucous membrane: it was perceptible also by examination from the rectum. This was probably a rudimentary uterus. M. Rayer and Velpeau fully satisfied themselves of the accuracy of these statements. The woman was never married, but she had been cohabiting with a man, and appeared to have the ordinary sexual feelings.*

The foregoing are the most remarkable and interesting cases of this kind that have been published. Others are recorded by Engel, Bousquet, Theden, Klintosch, Boyer, Meyer and Walther; several are referred to in Voigtet's *Manual of Pathological Anatomy*; and there are some, perhaps, reported by other writers which I have not seen, or cannot now recollect.† The instances which I have detailed are sufficiently numerous, and afford an ample demonstration of the effects upon the female economy of this unusual departure from the common arrangement of the system.

Since the preceding pages were written, I have learned from a friend, that an instance of malformation, extremely similar to the one recounted in the beginning of this paper, has very recently fallen under the observation of an eminent physician of Philadelphia. Whether this gentleman, who has obliged and benefited the medical public, by his valuable writings on more important subjects, designs to favor the profession with an account of this case, and with his opinions respecting it, I have not been informed.

ART. IV.—On the *Immovable Apparatus*, and its therapeutic application to various Surgical diseases. By WILLIAM HOLME VAN BUREN, M. D.

In the treatment of disease, perfect rest and quietude are among the most effectual means of ensuring its favourable termination: hence its importance in fevers, all internal inflammations, and nervous maladies. In many local affections its application is also indispensably necessary to effect a cure, and in others it forms a very valuable adjuvant.

The possibility of rendering a diseased part of the body immovable, and the invention of an apparatus by which the physician may have it in his power to fulfil this important therapeutic indication with readiness and facility, has always been a desideratum in medical practice. In general diseases

* *La Lancette Française*, Mars, 1839.

† [Two cases have recently been recorded by Prof. Burggraeve of Gand. A notice of them, and of some others, will be found in the Summary of this Number, under the head of Anatomy and Physiology.—Ed.]

in which rest is requisite, the quietude attendant on confinement to bed, is mostly sufficient; therefore it is principally in local affections, that it becomes desirable to produce immobility by means of an apparatus. It is consequently indispensable to the perfect consolidation of all fractures;—to the retention of luxated joints in their natural position, after reduction has been effected;—it is necessary to the union of all solutions of continuity, and to the favorable termination of diseases of the joints, whether acute, or chronic. United with compression, and support of the part, it constitutes one of the most powerful resources which we possess in the treatment of articular effusions, and affections of the joints dependent on a scrofulous diathesis.—The expedient earliest adopted, and that in most general use at the present day for the purpose of procuring perfect rest of a part combined with compression and support, is the application of splints and bandages. The qualities necessary to be possessed by good splints, and the directions for their application have been detailed, and indefinitely varied by numerous surgical authors among whom none is higher authority than the celebrated Pott. *Bandages* have been in use from the earliest ages, and their application is now called for every day in surgical practice for the purposes of compression, support and the dressings of ulcers and wounds whether caused by accident—or the results of surgical operations. These have been combined in a thousand different ways, and have served as the materials for numerous different kinds of apparatus, devised for the purpose of fulfilling the indications offered by different cases. The object which the ingenuity of the surgeon and of the mechanic has thus endeavoured to attain in these various changes, is to obviate the bad qualities inherent in all machines composed entirely of splints and bandages, and to supply their deficiencies. The following are some of these inconveniences:—the patient is long confined to his bed; he becomes extremely fatigued by the position which he is compelled to sustain; the digestive and other functions become impaired; and the general health frequently suffers to a great degree. To obviate these difficulties, machines have been invented; of these but one, that has come into use, answers at all the purpose for which it was intended; I refer to that of Amesbury, and its modifications. Besides the confinement and its consequences, there are many other objections to be urged against the use of bandages and splints, and their substitutes heretofore employed:—the complicated nature of most of these machines;—the want of facility, with which they may be obtained;—their weight, clumsiness, and the inconveniences to which the patient is subjected by their easy derangement;—the abrasion and consequent ulceration, to which parts are liable from their friction;—the necessity of their repeated renewal for the inspection of the part; or for the readjustment of the apparatus, which frequently becomes necessary from obvious causes. With regard to their efficacy in maintaining a state of immobility, we have the following decisive opinion of Boyer, than whom no one has ever had a better opportunity of judging: “Malgre l’opinion

généralement adoptée, il est facile de démontrer, que les bandages ne servent que très peu, ou même point, à maintenir les fragmens dans leur rapport naturel."*

The following remarks are however still more pertinent and from even higher authority than Boyer: "Nam neque in quiete, ut putant, crus continet, neque dum reliquum corpus in hanc vel illam partem convertitur, canales prohibent quominus crus sequatur, nisi, homo ipse diligenter advertat."†

Among the most useful machines which have been devised as substitutes for the bandages and splints, may be mentioned that of McIntyre, which is constructed so as to open and allow its removal, and at the same time when closed to remain accurately adjusted to the limb;—the apparatus of Mr. Greenough for fractures of the lower extremities, attains the same end, and, in addition, entirely supports the limb in an iron frame work; the apparatus of Desault for fractures of the thigh, as modified by Physick and by Hartshorne, is now only rivalled in the generality of its employment by the inclined planes of Marsinna. To prevent motion of the patient's body, which the common machines will not allow without derangement, Mr. Earle invented his very useful fracture bed, of which the French possess several modifications.

These inventions, although the most ingenious of their kind, are still liable to many of the objections before mentioned; their complexity, expense, and limited application, still remain to prevent their general use.—Thus has the ingenuity of the profession ever been taxed for the perfection of this most important surgical apparatus; and this perfection has not as yet been attained, except in particular instances. The great desideratum—the object requisite to the accomplishment of all the indications presented to the physician in cases where perfect rest and immobility (combined or not, as it may be with compression and support) are necessary, has been the discovery of a substance with which a bandage may be impregnated, allowing its application with readiness and facility, and immediately afterwards becoming perfectly firm and hard, so as to supply the place of splints, in the support of a part.

It is not only of late years that the attention of the profession has been directed to this subject. We have evidence that the Arabians, and some of the Eastern nations, were in possession of an immovable apparatus, which they were in the habit of applying to the treatment of fractures. It is generally believed that the idea was first suggested, in modern times, to M. Geoffroy, on the inspection of some ancient Egyptian relics. M. Sedillot,‡ in the early part of the past year, exhibited before the Royal Academy of Medicine of Paris, an apparatus made use of by the Arabians for fracture of the fore-arm; it consisted of numerous divided splints, each but an inch

* Dictionnaire des Sciences Médicales, tome xvi, p. 535.

† Hippocrates, De Fracturis.

‡ Archives Médicales, Paris, Février. 1839.

wide made of cane; these were firmly attached to a sheepskin, by means of which they were applied to the arm. Of this the splint recommended by Benjamin Bell* is but a modification; it consists of a thin strip of wood glued on leather and afterwards split longitudinally so as to be rendered flexible. A splint consisting of strips of whalebone attached by linen after the manner of women's stays and formerly much used by the English surgeons, is also on the same principle.—This expedient calls to mind the injunctions of Ambrose Paré, when suffering from a fractured leg to his friend, Richard Hubert who was attending him: "You must fortifie" said he, "the sides of my limb with junk made of tents or little sticks, and lined with linen cloth."† Both Fabricius Hildanus, and Heister recommend leather stockings rendered inflexible by brass rods to be used in certain cases of fracture. The modern Greeks, according to the statement of M. De Rougueville,‡ have long been in the habit of using a consolidating mixture, in their treatment of fractures; gum mastic is said to form its principal ingredient. A similar, though essentially different expedient is adopted in Spain, Corsica and the Brazils, introduced most probably, at first, by the African Moors.

The Italians have long made use of an immovable apparatus, which has been brought into notice by Assalini, in the modifications which he applied to it—consisting chiefly in the substitution of moistened paste-board for the original materials. The itinerant bone-setters of Switzerland, and the southern and western provinces of France, some of whom have become quite notorious on account of their success in the treatment of fractures, sprains, &c., employ paste-board, and willow splints; and solidify their apparatus by means of resin, pitch, mastic and other varnishes. Guy de Chauliac, one of the earliest writers on surgery in France, speaks of a composition which he employed, consisting of slacked lime, with different gummy and resinous substances. Ambrose Paré also recommends at length the following "plaster to hold fast restored bones:—℞. Thuris, mastich, aloës, boli armenii, ana ʒj; Aluminis roch, resinæ pini siccæ subtilissime pulv. ana ʒiij; Farinæ ʒjss; Album ovorum q. s.—make thereof a medicine, and let it be applied all around the leg."§

Among the English authors on surgical subjects, Cheselden,|| is the first who makes mention of our apparatus; in his "Anatomy" he speaks of a bone-setter of Leicester, who employed a mixture of wheat flour, with the whites of eggs, with which he smeared his bandages in order to render them solid; subsequently he adds:—"I think there is no better way than this to treat fractures, *for it maintains so perfectly the position of the limb.*" ¶

* Bell's Surgery, Phil. Ed. 1814, Appendix, p. 15.

† "The works of that famous chirurgeon Ambrose Paré" translated by Thomas Johnson, London, 1642.

‡ Voyage dans la Grece, Paris, 1820.

§ Op. citata p. 584.

|| 11th Edition 1778, p. 38. Lond.

¶ In Galtaker's translation of *La Dron's "Operative Surgery"* with observations by

Mr. Lawrence, the celebrated surgeon of London, in a lecture which I heard him deliver on this subject in January, (1839), ascribed the first employment of whites of eggs and powdered chalk, as a solidifying mixture, to a namesake of his a Mr. Lawrence of Brighton, Eng. within a few years past; he recommended the practice very highly, and went through the process before his class of applying the apparatus. It has been in use for some months past at St. Bartholemew's Hospital.

Mr. Alfred Smees has lately published in the *Lond. Med. Gaz.* an account of certain "moulding tablets for fractures" consisting of a composition of gum arabic and whiting, interposed between two layers of coarse linen. These appear to possess very valuable qualities as splints, and are certainly equal if not superior to those made of felt soaked in gum shellac, which on account of their being patented by the inventor, are placed to a certain degree beyond the reach of the profession.*

Lecat, a French surgeon, in the year 1735, in an essay on the treatment of fractures, to which a prize was awarded by the Royal Academy of Paris, makes the following assertion:—"A simple fracture when reduced, requires only to be maintained; and it need be examined but once before its consolidation, oftener is unnecessary." In 1768, M. Moscati, acting on these principles, presented to the notice of the "Academy" several cases of fracture which he had treated successfully by means of an apparatus, consisting of compresses and bandages saturated with the whites of eggs. The idea was again neglected, until resumed by Baron Larrey, in his well known apparatus employed with so much success after the battle of Moskwa;† this consisted of cushions and compresses, retained by the 18 tailed bandage, and rendered immovable by saturation with a mixture consisting of spirits of camphor, acetate of lead in solution, and whites of eggs; the apparatus thus applied remained undisturbed until the consolidation of the bones. Of its efficacy, and advantages, especially in military surgery, Larrey speaks in the highest terms.

The employment of plaster of paris, mingled with water and made to consolidate around a limb in order to render it immovable, which is generally in Europe ascribed to the celebrated Dieffenbach who made a very extensive use of it, was originally derived from the Moors of Spain,‡ and first brought

Cheselden p. 453, the latter surgeon recommends the same mixture for the cure of "contorted or club feet;" he also gives a case in which he applied it to a fracture of the fore arm which happened to a gentleman while travelling; he continued his journey, and at the end of forty days, the bandages were removed and the cure found perfect. At a much later period John Bell recommends the same materials to be used in similar circumstances—Vide "*Principles of Surgery*" p. 137 Amer. ed. N. Y. 1812.

* For an account of the moulding tablets See *Med. Exam.* vol. ii, no. 14. from *Lond. Med. Gaz.*

† Larrey's European Campaigns.

‡ Eaton's Travels in Arabia.

into notice in Europe, by Prof. Kluge of Berlin, in 1829, and Drs. Muttray* and Rauch, who wrote theses upon the subject. Before this, however, as early as 1819, Prof. Gibson of the University of Pennsylvania, had devised this method of treating fractures, &c., and had explained the manner of its application to his class.† It has been frequently tried both in Europe, and this country, but there are several serious objections to its use of which the most prominent is the extreme fragility of the plaster, thus to a great extent limiting the motion of the patient. I saw several cases of club-foot, which had been operated upon by section of the different tendons, retained thus in a plaster mould, in the Middlesex Hospital at London, under the care of Mr. Mayo.

In the year 1834, M. Seutin, Professor of Operative Surgery in the *University of Brussels*, and Surgeon of the "*Hôpital St. Pierre*," of that city, having under his care many of those wounded at the siege of Antwerp, made a fair trial of the apparatus of plaster; but he found that the material lost in tenacity what it gained in solidity; and that it was easily broken, thus losing its most important advantage, that of permitting progression and exercise.‡ He then employed that of Larrey, which possessed neither of these disadvantages; but he found in it others, viz:—its weight, the difficulty of always procuring its ingredients, and the trouble required in its subsequent removal. M. Seutin was thus led to search for some other material which would combine the firmness and efficacy of those used by Dieffenbach, and Larrey, and, at the same time, be free from their inconveniences. The substance in which he thought to find a combination of these qualities was starch. This he tried in various ways, and finally succeeded in applying it in such a manner as to satisfy his most sanguine expectations. The following is the manner of its application; take for example a simple fracture of the leg: the materials necessary are three or four ounces of starch, previously boiled; four common rollers, six yards in length each; and sufficient binder's board for four splints. After applying compresses wet with any discutient liquid, such as spirits of camphor, or Goulard water, to the part, a dry roller is passed from the toes to the patella, or above it according to the situation of the fracture, so as to form what is commonly termed the reversed spiral bandage; another of equal size is then applied from above downwards; the splints, previously cut and moistened, are now moulded to the limb, and the whole covered with a coat of starch; another roller is applied over the splints from below upwards, this is smeared with another coat of starch, and finally the remaining roller completes the apparatus. It is mostly necessary to place some charpie, or cotton, on each side of the

* MUTTRAY.—*De cruribus fractis gypso liquefacto curandis*. Berlin, 1831.

† Strange as it may seem two English surgeons—Messrs. Beaumont and Sweeting, were contending a year or two since, for the honor of having first used the plaster to cure fractures; the latter gentleman speaks in the highest terms of his success.

‡ British and Foreign Med. Review, Oct. 1838, and this Journal for Feb. 1839, p. 481.

ankle, in order to fill up the hollow caused by the starting out of the *tendo Achillis*. Assistants are required to support the limb in a state of extension during the application of the apparatus, and as the roller commences at the root of the toes, and a portion of the heel is also left uncovered, this is effected without difficulty. The fact that the toes, and a part of the heel are not covered is important, as from these parts the surgeon may judge of the general state of the limb, without removing the apparatus for the purpose of inspection. Still greater firmness may be given to the bandage by additional rollers applied as already indicated, with alternate layers of starch; the time which must necessarily elapse before the whole becomes perfectly dried, varies from thirty to ninety hours. In a report* of the trial of this apparatus, and of the success which attended its use in the New York City Hospital by Dr. Gould and several other surgeons of that place, its advantages over those in common use are enumerated as follows, viz:—1. Its accurate adaptation to the limb; 2. Its lightness and strength; 3. Its cheapness, and the facility with which it is obtained under all circumstances; 4. Its easy application; 5. It causes no ulceration either from friction, or confinement to bed; 6. The freedom of motion which it allows; and it obviates, lastly, all necessity of repeated adjustment.† It is well known that the starched bandages have been tried in most of our hospitals, and their general superiority is mostly acknowledged; still like all its predecessors, it has its faults; these are, the length of time required before the bandages become firm, and the want of support to which the part is subjected until the drying takes place; this latter objection which is seriously urged by some, will be seen hereafter to be, in most cases without foundation.‡ I have ascertained by experiment that a starched bandage of moderate thickness will not dry perfectly in less than 50 hours; by suspending the limb from a common cradle, or fracture bridge, after its application, by means of two or three small strips of bandage, paper being interposed to prevent their adhesion when dried, and by placing

* New York Journal of Med. and Surg. July, 1839.

† In the Maryland Medical and Surgical Journal, January, 1840, there are two cases described by Dr. A. F. Dalin which he treated successfully with the immovable apparatus; in conclusion he observes:—"Hitherto the various objections adduced against this method of treatment have not from experience been found valid."

There is also in the same number a description of a case of fracture of the thigh in an infant successfully treated in the same manner by Prof. Horatio G. Jameson of Baltimore. This application of the apparatus supplies a void in surgical practice which has hitherto been in a great degree neglected.

‡ There have been several cases reported in the journals of late of unsuccessful results from the use of the starched bandage; one by Dr. Defer of Metz, (see this Journal for February, 1840, p. 460,) which was evidently caused by shameful neglect on the part of the surgeon who first applied it; and several others in the last Number of this Journal, p. 461. In these cases the want of success must be referred to its proper cause, whether existing in the apparatus itself, or in the manner in which it is applied, which latter is the more probable.

vessels containing hot water* on each side of the limb,† so as to create a current of heated air which may have free access to all parts of the apparatus, it may be perfectly dried in twenty or twenty four hours and frequently sooner. The difficulty experienced in quickly drying this apparatus, led me partially to investigate the subject, and in a series of experiments which I tried with this view I found the following results: 1. By boiling the starch in a solution of acetate of lead, e. g. $\frac{3}{4}$ ij to the pint, or stronger, instead of using pure water, that the resulting compound was equally tenacious, if not more so than the starch prepared in the usual way, and that it became dry in much less time, generally from 15 to 20 hours, and frequently sooner. In this experiment a slight excess of diluted acetic acid was added to the solution of the acetate of lead in order to prevent the formation of a subacetate of lead, on the volatilization of a portion of the original acetic acid by the boiling and the consequent decomposition which would occur, owing to the incompatibility of the subacetate with the starch. 2. By roasting a portion of dried starch for a short time at a heat of about 230° Fahrenheit, so as to very slightly discolor it, it was rendered soluble in cold water, as originally demonstrated by Caventou, this solution dried on a bandage much sooner than the ordinary one, but when dry it was much less tenacious, more fragile, scaly and brittle, this in fact appears to be identical with the substance which De Saussure originally denominated "*amyline*."‡ A solution of starch exposed to a temperature of 70° Fahrenheit, undergoes fermentation, and is resolved partially into its several proximate principles, among which are sugar, the above mentioned "*amyline*," and a gummy substance called "*dextrine*" of which I shall hereafter speak; to this probably its dried solution owes its firmness.

After the publication of the report of M. Seutin, in 1834, the first notice, as before mentioned which appeared on the subject, his system of treatment was tried by many of the surgeons of France and Belgium. Many modifications of different parts of the apparatus were attempted;—for instance that of M. Laugier, of Paris, who employs common stout wrapping paper cut in the form of the eighteen tailed bandage in place of cotton, or linen rollers;—of M. Lafarge de St. Emilion, who used a mixture of boiled starch with powdered plaster of Paris,‡ in place of the simple substance, and asserts its superiority;—the substitution of tin, zinc, leaden, and carved wooden splints for those of paste-board, &c. &c. Still the original mode of its application is generally employed.

* In the hospitals of Paris these vessels are commonly made of pewter or brass of a flattened spheroidal form, with an aperture on the top closed by a screw containing a ring by which they may be carried; this simple arrangement is frequently very useful in cases where it is necessary to sustain the temperature of a part by artificial means.

† Annales de Chimie et de Phys. vol. xl, p. 193.

‡ According to the experiments of Mr. Alfred Smee, a mixture of plaster of Paris and white of eggs possesses no tenacity whatever, and crumbles into powder when dry, spontaneously. Op. cit.

Among the surgeons of Paris, who gave to the improvement of M. Seutin, the fullest and fairest trial, the celebrated Velpeau stands first. He was early convinced of its superiority, and employed it in numerous instances which were highly successful. So fully convinced was he that the great desideratum to be attained in the treatment of fractures, was as it were within his grasp, in the possession of an apparatus so near to perfection, that he devoted all his resources to the search for a remedy for its deficiencies. He instituted an inquiry amongst the chemists of the metropolis for a substance which could be substituted for the starch, and its faults, and in the course of this inquiry, he became acquainted with the results of the researches of M. Payen and M. Persoz, with regard to the chemical relations of *secula*. The experiments of these gentlemen demonstrated that, by the action of the substance called "*diastase*" existing in all farinaceous plants, as a proximate principle, upon *secula*, (which action takes place in the process of brewing malt liquors, where both these principles are present in the malt,) there results the separation of an entirely new substance from the *secula*, to which they gave the name of "*dextrine*."* From the properties said to be possessed by this *dextrine*, M. Velpeau thought proper to give it a trial; and the result of his experiment entirely fulfilled his anticipations; he found it to be precisely the substance which he required, and has since constantly employed it with increasing success in the immense field of practice which he enjoys, and the results of his experience are generally known to the profession. It is here necessary that I should give a description of the "*dextrine*," and of the manner of its application.

"*Dextrine*" so called from the peculiar influence which it exerts in the polarization of light, turning the refracted rays to the right more than any other substance known, is generally met with in the form of a yellowish white powder resembling the "*lycopodium*," though not possessing its color; its taste and odour are very much like those of the seeds of the common canteloup, or cucumber;† it is soluble to any extent in water either cold or warm; this solution is viscid, tenacious and translucent, and on the evapo-

* The peculiar action of the "*diastase*," in this case of chemical decomposition depends upon what Berzelius terms the "*doctrine of presence*." Its presence merely determines the elimination of the *dextrine* from the *secula* by the process called "*diastasis*" (from *διαστειν* to separate, which is merely a new name for a process which we can not comprehend,) hence the name of the substance "*diastase*." This property of "*diastasis*" is analogous to that possessed by certain substances to determine, by their "*presence*" alone, in a solution, a combination between other substances which would not otherwise unite, itself at the same time remaining unaltered; this property of causing combination is called by the distinguished chemist cited above—the property of "*catalysis*." See an interesting paper by Dr. Draper, "*On the Action of Presence*," in the No. of this Journal for Nov. 1837, p. 122.

† This resemblance is remarkably perfect, and it renders the supposition probable that the *dextrine* may exist in the melon family as a proximate principle in a distinct state; I have not before seen this resemblance remarked.

ration of the water, it is converted into a sort of varnish resembling glue, which is extremely firm, tough and unyielding, but is readily redissolved on the application of water. It is insoluble in alcohol. In powder it has to a considerable degree the feel of starch between the fingers, and when a portion is thrown on burning coals, or the flame of a lamp, it flashes more vividly than most other minutely divided combustible substances of a like nature.—According to Mr. Proctor when tested with the tincture of iodine it yields a vinous red or purple hue, differing essentially from that produced in a solution of starch by the same test, and thus disproving its identity with that substance.*

Dextrine has been used to a considerable extent in commerce and manufactures, especially in Paris, and other parts of France, in the form of its watery solution with sugar, under the name of "*Sirop de Dextrine*," as a substitute for some simple syrups, and in the sophistication of others; it is also an ingredient in the French beer, as manufactured at Paris. The continued action of diluted sulphuric acid upon starch, at the boiling point, results in the production of this substance; by carrying the process still farther the whole amount of starch employed is converted into uncrystallizable sugar. It thus appears that "dextrine" is one of the proximate organic principles, entering into the composition of all amylaceous vegetables and plants, in combination with fecula, amidine, diastase, gum, &c., &c., analogous in its properties with many of them, but essentially differing from all;—that it exists wherever farinaceous plants are found, and may be obtained in a separate state with facility, and at little expense. It is sold in Paris, by the quantity, at the price of eight sous the pound. With regard to its practical application, the following is the manner in which M. Velpeau employs it.

For a fracture of the tibia, about $\frac{3}{4}$ iv of the powder of dextrine are necessary; this is thoroughly moistened with spirits of camphor, which prevents it from caking when the water is added—as the powder is insoluble in alcohol and its particles are merely separated, so as to be equally acted upon by the water. The quantity of water should be sufficient to render the solution about the consistence of molasses. If properly prepared, and allowed to stand a few minutes before use, it forms a sirupy solution fit for immediate application.

In applying the apparatus to the leg, after reducing the fracture, a dry roller is passed from the toes to the knee; two splints cut from the common

* Most writers on Organic Chemistry pass this substance without notice; Orfila in the 3d vol. of the "*Chimie Médicale*," gives a limited description of its chemical relations. p. 396.

It gives me pleasure to be able to refer for a more minute detail with regard to the "Dextrine", its mode of preparation &c., to an excellent paper entitled "*Observations on Dextrine and Diastase*" published in the *Am. Journ. of Pharmacy*—January, 1840, by Wm. Proctor, Jr. of this city.

binder's board, and previously moistened so as to mould themselves exactly to the inequalities of the limb, are then placed one on either side; these are smeared over with the mixture, and a second roller, thoroughly soaked in the solution, is applied over them, and afterwards perfectly covered externally by a coat of the varnish.* The limb would then, in the case before us, be suspended from a fracture bridge, and surrounded by vessels of hot water, in the same manner as previously mentioned in the description of the starched bandage.

In this way the bandages in less than six hours, become so firm and hard as to sustain the limb more perfectly than the most complicated machines, and the patient may take exercise constantly, making use of crutches, and supporting the part by a stirrup of bandage passed around the neck, without the least danger of deranging the apparatus. In fact, patients at La Charité, with simple fracture, are frequently seen promenading the garden, in a day or two from their entrance, with perfect ease. When the period has elapsed which is necessary to the consolidation of the fracture, the apparatus is removed with the greatest facility, after soaking the part for a few minutes in water. In the use of dextrine in this manner, M. Velpeau has been gratified with the most perfect success. During a period of eight months of constant attendance in his wards, in which time upwards of fifty cases of fracture came under his care, I saw there no other apparatus but that of dextrine—and the bandage of Scultetus for immediate use in compound fractures. Part of the time I was actively engaged in his service, and had frequent opportunities of applying the apparatus under his inspection, and of closely watching its action during the whole progress of cure. Of its application to each particular case of fracture, luxation, &c., it would be useless to enter into a detailed description; the account which has already been given, will serve as a model for any that may occur. In any case where additional strength is required, the number of bandages of course must be increased.

In fractures of the lower extremities where extension and counter-extension become necessary, this is effected, as usual, by a bandage around the foot and ankle before the dextrine is applied, made fast to the foot of the bed, and the common strap beneath the perinæum, attached above. In luxations, the common bandage is merely soaked with the solution of dextrine, before its application. In sprains, or luxations, accompanied by severe straining, or laceration of the ligaments, this apparatus is particularly valuable, as it secures such perfect rest and immobility, which are indispensable to a favorable termination of the accident.† After the operation of *tenotomy*, or the cutting

* A strip of stout binder's board soaked in a solution of dextrine, and dried, makes a very firm splint, and when moistened is easily adapted to any part of the body, where it may be retained by a simple bandage,—thus constituting a very simple and effectual support.

† In fractures of the clavicle, and luxations of the humerus, M. Velpeau employs a

of the tendons for the cure of club-foot, there is no machine so generally useful, or so easy of access as the *immovable apparatus*. M. Velpeau employed it with the most perfect success in five cases, on which he operated whilst I was in his service; in one of these cases there were five tendons divided, and subsequently two more. It was also his very common practice to order its application to diseased joints, particularly in those cases where there exists a fungous state of the synovial membrane, which is so common a variety of the white-swelling, and in which, after the failure of the usual antiphlogistic treatment, perfect rest conjoined with compression is the only effectual resource. In articular effusions, especially of a chronic character, where immobility, united with pressure, is so useful in promoting absorption; in coxalgia, and the different varieties of diseased joints requiring rest and support, the immovable apparatus has been employed with very favorable results. In the "*phlegmasia alba dolens*" it has occurred to me that a regularly applied pressure to the whole limb, by means of this, or the simple bandage, united with the elevated position, would form a very good means of subduing this disease, which is by no means under the control of our art. I have had however the opportunity of applying this treatment but to one case. In this instance the limb was excessively painful, the slightest motion causing the patient to cry out with the suffering; the *dextrine* bandage was applied in the evening, and the limb elevated; this was the fourth day of the disease. On the next morning the oedematous effusion had considerably decreased, the patient suffered no more pain, and the recovery advanced with unusual rapidity.*

In the treatment of varicose veins, for the cure of which the operation of excision, and the obliteration of the vein by means of pins, and ligatures, have proved, at best, such dangerous remedies, the immovable bandage offers

peculiar bandage of his own; which is well known—this however is objectionable as it always brings the elbow forward, whatever may be the situation of the fracture, or the relation of the broken extremities; this he applies after merely soaking the roller in dextrine dissolved.

* In the "*London Medical Gazette*," of June last, is published a clinical lecture delivered at the Westminster Hospital by Dr. Burns, in which he maintains that this disease consists in a *phlebitis* of the leg caused by the pressure of the pregnant uterus upon the common iliac veins; and that the left leg is more commonly affected than the right, owing to the fact that the left iliac vein when it reposes on the last lumbar vertebra is crossed by the common iliac artery, and is thus subjected to a double pressure, the arrangement not being the same on the right side. He confirms this idea by the citation of 20 cases described by Linn, Davis and Velpeau, in which number the right leg was affected in one case, both legs in 6, and in the remaining 13 the left alone. This explanation is rendered plausible when we remember that the "noise of the placenta," as it was formerly called, the "*bruit placentaire*" of Bouillaud, is ascribed by him to the pressure of the uterus upon the hypogastric arteries, and that this fact is now generally admitted by physiologists: If these ideas are correct, the pathology of the disease would indicate a treatment similar to that mentioned above, consisting of pressure and elevation of the limb.

a valuable substitute for the laced stocking, &c., at least in hospital practice.

Having now mentioned all the peculiarities of the improvement of M. Velpeau, the ensuing remarks will apply equally to the starched apparatus, and that of dextrine,* for it will be perceived that the one is but an improvement on the other, and that many advantages are possessed in common by both.

With regard to the application of this apparatus to the treatment of compound, and comminuted fractures, I have not as yet spoken. By surgeons of high authority who have given to it a fair trial, contradictory opinions have been expressed. The common practice of M. Velpeau is to apply at first the bandage of Scultetus, and to continue this until the external wound is in a favorable state for healing, when the dextrine is applied without delay; while the bandages are still wet, a hole is cut out immediately over the wound† so as to allow free access to it, and it is dressed daily. Of late M. Velpeau has been gradually growing more partial to the immediate application of the dextrine, in despite of the inflammation and tumefaction of the part, and he does not hesitate to defend this practice in public, in which he is sustained by Larrey, Gimelle, and some others.‡

* It may be proper to remark that M. Velpeau objects to the term "appareil inmovible," (immovable apparatus,) which is generally applied to this bandage; Larrey, however, whom the French consider as its original inventor, approves of the term, as also does Scutin. I have used the phrase indifferently as it will be perceived, applying it both to the dextrine and the starch.

† This expedient was resorted to by Dieffenbach in his plaster apparatus, and according to M. Sedillot was also employed by the Arabs in their immovable splints consisting of split reeds and sheepskin.—*Gazette Médicale*.

‡ In order that there may be no misunderstanding on this point, I will quote the words of Velpeau, in some remarks which he made at the Académie Royale de Médecine, on the sitting of August 5th, 1839; published in the *Gazette Médicale* of August 10th 1839.—"Je me suis beaucoup occupé du traitement des fractures; j'ai traité un grand nombre de malades depuis l'époque où j'ai commencé à en faire l'application, puisque je pourrais citer maintenant plus de 150 observations; j'ai donc quelques résultats intéressants à présenter à l'Académie. Je ne crois pas qu'il y a de danger dans l'application immédiate du bandage inamovible; s'il n'y a pas d'engorgement, ce moyen en prévient le développement; s'il y a déjà de la tuméfaction, et que la compression soit bien faite, elle disparaît; rien n'empêche d'enlever l'appareil dans le cas où il produirait de la douleur, ou pourrait amener des accidens. * * * * Dans les faits qui se sont passés sous mes yeux, la compression qu'il exerce m'a paru toujours fort avantageuse pour dissiper la tuméfaction; il a passé rarement à l'état de suppuration. * * * * Je n'ai pas vu une seule fois dans le nombre des faits que j'ai observés, survenir des accidens qui, avec quelque raison, puissent être attribués au bandage. * * * *

"S'il doit être enlevé, et renouvelé, on le ramollit en l'humectant; rien n'est plus facile." L'appareil de dextrine durcit avec une grande rapidité; il suffit de quelques heures, au lieu de trois jours qu'exigeait le bandage de M. Scutin. * * J'ajouterais qu'il est facile, en surveillant attentivement le développement des douleurs, en consultant la tinte du membre, l'apparition de phlyctènes, &c., de savoir au juste quand il faut d'enlever l'appareil."

The application of compression by bandaging, as a direct means of subduing inflammation, has been strongly advocated in this country, by Prof. Dudley, of Kentucky, and his experience coincides with that of Velpeau.*

Thus Suetin and Velpeau, who have had the greatest experience on the subject, agree in applying the bandages immediately; they are supported by Larrey, Gimelle and Berard, who cite thirty cases treated in this manner. On the other hand MM. Blandin, Breschet, Gerdy, and some others differ on this point, but their experience is more limited. There exists also a difference of opinion with regard to allowing the patient to take exercise; Suetin, and his partizans above cited, recommend exercise on crutches, with the limb supported wholly, or partially, by a stirrup from the neck; Blandin, Breschet, Amussat, and some others object to this practice, considering that it favours the formation of false articulations. All concur, however, in recommending the plan of making openings in the bandages opposite to external wounds, an expedient which it appears was adopted by the ancients, as it is explained, and figured in the work of Scultetus, and noticed in other authors.

It now remains for me but to discuss the objections, which have been urged against the employment of the "immovable apparatus," and to enumerate the advantages which it possesses, whether composed of starch or dextrine, over those commonly in use. It has been objected to the apparatus of starched bandages, that the limb to which it is applied is destitute of support until the bandages are dry, which requires from 30 to 96 hours. But it is not within the first two or three days, that displacement of the fractured extremities is to be feared; at a later period, when some degree of motion is allowed, there may be danger of its occurrence. The starched bandage while still wet is very nearly as firm as the ordinary apparatus, and if there be any fear of trusting to it alone, the expedient of Amussat may be resorted to, viz:—the application of a wooden, or metallic splint to the outside of the bandage until it is dried. This objection, however, cannot be urged against the dextrine, as it can be dried in three or four hours. Again it is said that when applied upon a tumefied limb, the swelling when it subsides may leave the bandage too large; when this takes place to a considerable degree the apparatus must be renewed; than this nothing is easier to effect, as the same bandages may be reapplied; when the disproportion is inconsiderable it may be remedied by stuffing charpie, or carded cotton into the crevices of the apparatus.

In a case of fracture of the tibia and fibula, treated successfully by the starched bandage at the Pennsylvania Hospital, by Dr. Thos. Harris, this inconvenience was satisfactorily remedied, by applying a bandage over the apparatus at an advanced period of the cure, which by compression, obliterated

* Vide "*Transylvania Journal of Medicine*," vol. i, No. 9, November, 1828.

ted the disproportion between it, and the limb, which had become somewhat shrunk from atrophy of the muscles.*

Drs. Christophers and King, in several instances in which they used Seutin's bandage, successfully adopted the expedient of slitting it down in several places, and surrounding it by two or three gum elastic straps.† Some have expressed great fears that the compression thus effected by applying a firm bandage to a swelled limb, would cause strangulation, and subsequent gangrene; but these fears are unfounded, as daily practice proves to the contrary; in fact we do not strangle the limb in thus applying the apparatus; compression is effected with regularity from below, upwards, and experience shows, that far from inducing injurious consequences, it produces the most beneficial results.‡ Compression regularly applied to a healthy limb would produce atrophy, not gangrene; and on a swelled and inflamed part it reduces the inflammation, and if we are to credit the results of Velpeau's experiments, it produces effects almost like those of enchantment. He commenced its use with the same ungrounded fears of strangulation and all its consequences; but the results of reiterated experiments dispelled his doubts, and confirmed him in that practice which he now so strenuously advocates.

Another disadvantage attributed to this method, is that we are left in the dark so entirely as to the state of the limb, that we can no ascertain whether there exist eschars, abscess, or any other complications. Now if only moderate attention be employed, none of the accidents need occur; they must produce pain, and general symptoms, and then the bandage may be removed; as regards strangulation too, the extremities of the toes and the heel remaining uncovered, give timely notice of the approach of gangrene.‡ With regard to the confinement of pus, by the application of the bandage to cases complicated with wounds of the integuments, experience has proved that it does not give rise to those pernicious results too generally apprehended; the pus is not decomposed by the contact of the air, and infiltration of the integuments rarely takes place.—The formation of pseudo-arthroses, or false articulations, an objection so much dwelt upon by the opposers of this plan of treatment, is ever the result of carelessness, and want of judgment on the part of the practitioner, or of other obvious causes, and the immovable bandage is no more liable to induce such consequences than is any other apparatus inefficiently applied. At all events these objections can not be urged against its employment in luxations, sprains, club-foot, diseases of the joints &c., &c.

* *Med. Exam.* vol. ii. No. 9, where there are reported five other cases treated with success, by the same surgeon at the Pennsylvania Hospital, after the method of Seutin;—three of these were oblique fractures of the femur which were cured without perceptible deformity. In all these cases more or less exercise was allowed during the cure.

† *London Med. Gaz.* Aug. 11th, 1839.

‡ *Brit. and For. Med. Review*, Oct. 1838, and this *Journal* for Feb. 1839, p. 483.

But by far the most powerful arguments which can be brought forward in support of this method of practice, are the undoubted results of experience. Seutin with his 200 cases, and his distinguished success, has passed with triumph the critical ordeal, and severe scrutiny of the French surgeons, ever so distrustful of foreign improvements, and modern innovations, and has succeeded in convincing them of the efficacy of his treatment, and in substituting it to a great extent for their own. Larrey, Velpeau and Blandin, the committee of the *Royal Academy of Medicine* of Paris, the authority of the French capital, and the arbiters of surgical practice, after a patient investigation of the subject, report in the most favourable and even enthusiastic terms their conviction of its superiority, and each adds his personal testimony as additional tribute.*

In addition we have the testimony of the cautious Breschet, of Amussat, Bernard, Rochoux, Gimelle, Emery, Laugier and Lafargue, who have each tried thoroughly the experiment, and unite in confirming its success. The anticipations of Cheselden have been realized; and the approval of Lawrence has been more than confirmed.—The British and Foreign Medical Review† in the early part of the present year, contained a review of some length, in which the subject is discussed at large, and the employment of the immovable apparatus meets with the most hearty approval; the objections to its use are ably refuted, and its superiority fully asserted; the learned reviewer in conclusion remarks: "To those persons who are unconvinced by our statements, we would say, make the experiment yourselves; make it fairly and without prejudice; and do not pronounce judgment without having experimentally tested its correctness."

In so limited an essay as the nature of the present paper requires that it should be, we can but glance at the immense advantages which must accrue to the physician, as well as to the patient, on the introduction of the immovable apparatus into general use, in its convenience and economy in military and naval surgery, in hospital practice at large, and amongst the poor;—to the traveller whom an accident can no longer delay in the prosecution of his journey;—to the tradesman who in many cases may continue his occupation, if a sedentary one, with a fractured limb. There are no painful excoriations, nor tedious ulcerations to torment the bed-ridden patient in his monotonous and wearisome confinement;—to irritate the constitution, and drag down the health, which is so often, and so severely affected.

In the public practice of M. Seutin, it is reported that on each occasion the bandage has been promptly applied, and the patient has been in the greater number of cases, raised up and placed on crutches as soon as the bandages were thoroughly dried. Persons have proceeded on their journeys at the end of three days from the application of the apparatus. Those

* For their Report and several opinions, see *Gaz. Médicale de Paris* of August 10th 1839.

† In a critique upon the works of Burke and Lonsdale on Fractures, Feb. 1839.

living in town, with simple fracture, are bandaged, looked after for four or five days, and then discharged; at the end of five or six weeks they come again to the hospital; the apparatus is removed, and they are found cured, and ready to return to their usual occupations.

In conclusion I can do no better, than repeat the words of Velpeau, to whose enterprise and industry the profession is already so largely indebted: "Ce qui m'étonne, c'est que ce bandage ne soit pas plus généralisé encore dans son emploi; il est si simple, si facile, et présente tant d'avantages, et si peu d'inconvéniens, que je ne comprend pas les reproches qu'on pourrait lui adresser."

ART. V. *Statistics of the Amputations of Large Limbs that have been performed at the Massachusetts General Hospital; with Remarks.* By GEO. HAYWARD, M. D., one of the Surgeons to the Hospital.

THE following table, it is believed, contains a list of all the amputations of large limbs that have been performed at the Massachusetts General Hospital since the establishment of that institution. Such particulars are added as were thought calculated to throw light on the subject. These in a few instances are not so full perhaps as could be wished.

This remark applies especially to some of the early cases, which occurred at a period when the records of the hospital were not kept with that precision that has since been adopted. The omissions, however, are not thought to be such as will impair to any extent the value of the table.

The statistics of amputation are very desirable. They may probably lead to practical results of some importance. From what has recently been published, it is evident that amputation is more often followed by the death of the patient, than was formerly supposed. But to what extent this can be attributed to the operation itself, or to the disease or injury for which it was performed, cannot be precisely determined.

It has been stated, that more than one-half of all whose limbs are amputated at some of the hospitals of Paris, die; and it appears, from a very valuable paper published by Dr. Norris in the Number of this Journal for August, 1838, that of fifty-five patients, being the whole number on whom amputation was performed in the Pennsylvania Hospital during a period of eight years, twenty-one died.

And yet, these unfavorable results cannot fairly be attributed to the operation alone. There are a variety of causes that would exert a bad influence in the hospitals of Paris, that are not to be met with in those of our country. The former are more crowded, less comfortable, and badly ventilated in

comparison with similar institutions here, and it is believed that the after-treatment is not so faithful and assiduous as with us.

Dr. Norris, has no doubt suggested the true cause of the large proportion of fatal cases in the Pennsylvania Hospital, and that is that the operation was probably in many cases too long delayed, in the hope of saving the limb. No one can doubt, who knows any thing of that institution, that nothing would be omitted that would be thought likely to add to the comfort and safety of the patient.

While it is no doubt true that amputation is sometimes too long delayed, it is equally certain that it is often performed when it might have been avoided. It is difficult in many cases to decide on the best course, but the operation should not be done without the clearest evidence of its necessity, for it is a hazardous and painful one, and, even when perfectly successful, leaves the patient in a mutilated state.

It will be seen by the subjoined table, that the results at the Massachusetts Hospital were somewhat more favourable than those at the Paris, and Pennsylvania Hospitals above referred to. In a large proportion of the following cases, the amputation was done by the circular incision; the flap operation was adopted occasionally, whenever there was reason to believe that a better stump could be made by it than by the other method. The dressings were always of a light and simple kind; consisting of two or three strips of adhesive plaster and a small compress and roller; and yet there are some surgeons of the present day, who would perhaps regard these as more cumbersome than was necessary.

If the bleeding was slight, the dressings were applied before the patient left the operating room; but if there was any thing more than an oozing from the veins, it was deferred till a few hours after.

Secondary hemorrhage was not frequent, though it sometimes occurred; pressure was generally sufficient to arrest it, but occasionally it was found necessary to open the stump, and tie one or more vessels. In one case where hemorrhage occurred twelve days after the operation, from a diseased state of the posterior tibial artery, the femoral artery was tied. No one who had secondary hemorrhage died, and though it sometimes debilitated the patient, in no case was there any permanently injurious effect from it.

In all the cases it was attempted to heal the wound by the first intention, and in a few instances it was completely successful, but in by far the greater number it was only partially so.

It has not been the usual practice at the Massachusetts Hospital to administer an opiate before an operation, though in a few instances it has been done. In one case where amputation was performed on a patient with delirium tremens, twelve grains of opium were given shortly before the operation; he became drowsy soon after and recovered.

A Table of the Amputations of Large Limbs that have been performed at the Massachusetts General Hospital.

No.	Name.	Age.	Time of admission.	Disease or injury.	Time of operation.	Place of operation.	Result.	Time of discharge or death.
1	Francis Vanvactor,	60	Jan. 26, 1832.	Compound fracture of right leg.	Feb. 5, 1832.	Below knee.	Died.	Feb. 11, 1832.
2	Sarah Ann Newell,	42	Nov. 1, 1833.	Large ulcer inside of left knee.	Nov. 16, 1833.	Above knee.	Recovered.	June 21, 1834.
3	John F. Manco,	22	Dec. 19, 1834.	Frost-bite—both feet.	Dec. 20, 1834.	Below knee, both legs.	Recovered.	April 2, 1834.
4	William C. Stone,	16	March 27, 1834.	White swelling seven years—left knee—much bent.	March 30, 1834.	Above knee.	Recovered.	May 4, 1834.
5	Lawrence Ryan,	18	May 29, 1835.	Swelling 18 months—right knee.	June 17, 1835.	Above knee.	Died.	June 20, 1834.
6	William Littlefield,	30	Nov. 19, 1835.	Compound fracture of right leg—trismus.	Dec. 4, 1835.	Above knee.	Died.	Dec. 5, 1834.
7	Thomas Hooper,	21	May 22, 1835.	Abscess and fungus—right foot.	May 30, 1835.	Below knee.	Recovered.	July 30, 1835.
8	Moses Cheney,	57	Aug. 22, 1836.	Ulcerated tumour—right arm.	Aug. 27, 1836.	Above elbow.	Recovered.	Oct. 6, 1835.
9	Leather Haskell,	41	Nov. 25, 1836.	Tumour on tibia—kicked by horse 2 years previous.	Dec. 17, 1836.	Below knee.	Recovered.	March 1, 1836.
10	Levi Stearns,	22	Sept. 4, 1837.	Knee swelled three years—unable to walk 6 months.	Dec. 9, 1837.	Above knee.	Recovered.	Feb. 12, 1837.
11	John Carrier,	18	March 27, 1837.	Ulcers on leg—knee bent.	May 9, 1837.	Above knee.	Recovered.	June 8, 1837.
12	Federal Burt,	34	April 7, 1837.	Fungus Hematodes.	April 11, 1837.	Above elbow.	Recovered.	June 18, 1837.
13	Samuel G. Morrill,	8	April 8, 1837.	Swelled and stiff knee from injury, three months.	Dec. 8, 1837.	Above knee.	Recovered.	Dec. 14, 1837.
14	Margaret Twiss,	26	May 10, 1838.	Scrofulous disease of right elbow.	Mar. 1838.	Above elbow.	Recovered.	April 9, 1838.
15	Charles Richards,	30	Oct. 31, 1838.	Compound fracture of leg.	Nov. 10, 1838.	Below knee.	Recovered.	Jan. 15, 1838.
16	John Cleverly,	22	April 23, 1838.	Painful tumour of knee, 10 years.	May 9, 1838.	Above knee.	Died.	May 18, 1838.
17	John Evans,	17	Nov. 18, 1838.	Compound fracture.	Nov. 19, 1838.	Above knee.	Recovered.	Dec. 26, 1838.
18	George Hallen,	24	Dec. 6, 1839.	Dislocation of patella—Contraction of joint—Exceedingly painful.	Dec. 20, 1839.	Above knee.	Recovered.	Jan. 28, 1839.
19	Abigail Day,	50	March 4, 1839.	Fungus Hematodes.	March 5, 1839.	Above knee.	Recovered.	May 9, 1839.
20	James Dowseley,	27	May 15, 1839.	Compound fracture of leg.	June 3, 1839.	Below knee.	Died.	June 3, 1839.
21	Henry Mills,	23	May 29, 1839.	Comp'd. comminut'd & complicated frac. leg & knee.	May 30, 1839.	Above knee.	Died.	July 4, 1839.
22	Fernando Worcester,	12	Nov. 18, 1839.	Severe injury of knee joint.	Dec. 5, 1839.	Above knee.	Recovered.	March 15, 1839.
23	John Hatheway,	46	Jan. 27, 1839.	Ulcers on foot 20 years—on leg 10 months.	Feb. 11, 1839.	Below knee.	Recovered.	March 30, 1839.
24	Elias Hine,	49	Jan. 29, 1839.	Fracture of both bones of left leg.	Feb. 26, 1839.	Below knee.	Recovered.	May 8, 1839.

A Table of the Amputations of Large Limbs—Continued.

No.	Name.	Age.	Time of admission.	Disease or injury.	Time of operation.	Place of operation.	Result.	Time of discharge or death.
25	Richard Alley,	49	1830.	Oblique fracture of both bones of right leg.	1830.	Below knee.	Recovered.	Aug. 30, 1831.
26	Moses Chase,	23	June 24,	White swelling of knee, three years.	June 1831.	Above knee.	Died.	Dec. 21, 1830.
27	Abraham D. Phillips,	43	Dec. 4,	Irritable ulcers from injury.	Dec. 18, 1831.	Below knee.	Recovered.	March 11, 1831.
28	Elijah N. Barker,	10	June 28,	Thigh crushed by an anvil.	June 29,	Above knee.	Recovered.	Nov. 1, 1831.
29	Robert Caswell,	13	Jan. 2,	White swelling from infancy—injured seven years after—limb useless.	1832.	Above knee.	Recovered.	Feb. 25, 1832.
30	Joseph Fernald,	26	March 21,	Knee strained six years before entrance—bones felt through fistula.	April 14,	Above knee.	Recovered.	July 13, 1832.
31	James Ryan,	27	April 25,	Integuments of leg crushed by wagon-wheel.	April 26,	Below knee.	Recovered.	July 17, 1832.
32	Benjamin Nourse,	57	June 8,	Ulcer around leg, 20 years.	Jan. 1833.	Below knee.	Recovered.	March 12, 1833.
33	Mary C. White,	27	July 9,	Abscess inside right knee, 23 years—constant discharge—bones carious.	November,	Above knee.	Recovered.	Jan. 14, 1833.
34	Charles West,	21	Aug. 28,	Injury of knee—subsequently great inflammation.	Oct. 26,	Above knee.	Recovered.	Dec. 18, 1832.
35	Joseph Bregden,	37	Sept. 26,	Chronic disease and extensive caries of tibia.	Oct. 30,	Above knee.	Recovered.	Dec. 22, 1832.
36	Elizabeth Jew,	21	Jan. 11,	Chronic inflammation of knee—health failing.	1833.	Above knee.	Recovered.	April 13, 1833.
37	Henry T. Spear,	19	March 2,	Deformed foot, ankle ankylosed and painful.	Feb. 2,	Below knee.	Recovered.	April 10, 1833.
38	John Jordan,	26	May 8,	White swelling.	March 16,	Above knee.	Recovered.	July 11, 1833.
39	Harriet M. Andrews,	23	Oct. 29,	Stiffness of right knee four years—abscess 3 weeks.	Dec. 28,	Above knee.	Recovered.	Feb. 19, 1834.
40	Hosea Sargent,	35	Dec. 25,	Fungus over ligamentum patellæ from blow 2 years before.	Jan. 1834.	Above knee.	Died.	Jan. 16, 1834.
41	Patrick Donahue,	24	1834.	Foot crushed by railroad car—same day.	1834.	Below knee.	Died.	Feb. 13, 1834.
42	Hannah Bray,	14	Jan. 29,	Abscess on back right hand from blow 1 year before.	Feb. 8,	Below elbow.	Recovered.	Nov. 26, 1834.
43	Thomas Marshall,	25	June 20,	Right wrist lacerated by cannon—same day—(face torn, &c.)	Nov. 8,	Below elbow.	Died.	June 29, 1834.
44	Ephraim M. Spear,	37	Nov. 12,	Part of foot amputated three years before for frost-bite—stump not healed.	June 27,	Below knee.	Recovered.	Dec. 17, 1834.
45	James Neal,	29	1835.	Left hand shattered by bursting of gun day of entrance.	Nov. 15,	Below elbow.	Recovered.	May 13, 1835.

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3	John F. Manco,	22	Dec. 19, 1823.	Frost-bite—both feet.	Dec. 20, 1824.	Below knee, both legs.	Recovered.	April 2, 1824.
4	William C. Stone,	16	March 27, 1824.	White swelling seven years—left knee—much bent.	March 30, 1824.	Above knee.	Recovered.	May 4, 1824.
5	Lawrence Ryan,	18	May 20, 1824.	Swelling 18 months—right knee.	June 17, 1824.	Above knee.	Died.	June 20, 1824.
6	William Littlefield,	30	Nov. 19, 1825.	Compound fracture of right leg—trismus.	Dec. 4, 1825.	Above knee.	Died.	Dec. 5, 1824.
7	Thomas Hooper,	21	May 22, 1825.	Abscess and fungus—right foot.	May 30, 1825.	Below knee.	Recovered.	July 30, 1825.
8	Moses Cheney,	57	Aug. 22, 1825.	Ulcerated tumour—right arm.	Aug. 27, 1825.	Above elbow.	Recovered.	Oct. 6, 1825.
9	Luther Haskell,	41	Nov. 25, 1826.	Tumour on tibia—kicked by horse 2 years previous.	Dec. 17, 1826.	Below knee.	Recovered.	March 1, 1826.
10	Levi Stearns,	22	Sept. 4, 1827.	Knee swelled three years—unable to walk 6 months.	Dec. 9, 1827.	Above knee.	Recovered.	Feb. 12, 1827.
11	John Carrier,	18	March 27, 1827.	Ulcers on leg—knee bent.	May 9, 1827.	Above knee.	Recovered.	June 8, 1827.
12	Federal Burt,	34	April 7, 1827.	Fungus Hematodes.	April 11, 1827.	Above elbow.	Recovered.	June 18, 1827.
13	Samuel G. Morrill,	8	April 8, 1827.	Swell'd and stiff knee from injury, three months.	Dec. 8, 1827.	Above knee.	Recovered.	Dec. 14, 1827.
14	Margaret Twiss,	26	May 10, 1828.	Scrofulous disease of right elbow.	Mar. 1828.	Above elbow.	Recovered.	April 9, 1828.
15	Charles Richards,	30	Oct. 31, 1828.	Compound fracture of leg.	Nov. 10, 1828.	Below knee.	Recovered.	Jan. 15, 1828.
16	John Cleverly,	23	April 23, 1828.	Painful tumour of knee, 10 years.	May 9, 1828.	Above knee.	Died.	May 18, 1828.
17	John Evans,	17	Nov. 18, 1828.	Compound fracture.	Nov. 19, 1828.	Above knee.	Recovered.	Dec. 26, 1828.
18	George Hatten,	24	Dec. 6, 1829.	Dislocation of patella—Contraction of joint—Exceedingly painful.	Dec. 20, 1829.	Above knee.	Recovered.	Jan. 28, 1829.
19	Abigail Day,	50	March 4, 1829.	Fungus Hematodes.	March 5, 1829.	Above knee.	Recovered.	May 9, 1829.
20	James Dowsley,	27	May 15, 1829.	Compound fracture of leg.	June 3, 1829.	Below knee.	Died.	June 3, 1829.
21	Henry Mills,	23	May 29, 1829.	Comp'd comminut'd & complicated frac. leg & knee.	May 30, 1829.	Above knee.	Died.	July 4, 1829.
22	Fernando Worcester,	12	Nov. 18, 1830.	Severe injury of knee joint.	Dec. 5, 1830.	Above knee.	Recovered.	March 15, 1830.
23	John Hatheway,	46	Jan. 27, 1830.	Ulcers on foot 20 years—on leg 10 months.	Feb. 11, 1830.	Below knee.	Recovered.	March 30, 1830.
24	Elias Hine,	49	Jan. 29, 1830.	Fracture of both bones of left leg.	Feb. 26, 1830.	Below knee.	Recovered.	May 8, 1830.

A Table of the Amputations of Large Limbs—Continued.

No.	Name.	Age.	Time of admission.	Disease or injury.	Time of operation.	Place of operation.	Result.	Time of discharge or death.
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26	Moore Chase,	23	June 24,	Oblique fracture of both bones of right leg.	June 1831.	Below knee.	Recovered.	Aug. 30, 1831.
27	Abraham D. Phillips,	43	June 24,	White swelling of knee, three years.	Nov. 27.	Above knee.	Died.	Dec. 21, 1830.
		43	Dec. 4,	Irritable ulcers from injury.	Dec. 18.	Below knee.	Recovered.	March 11, 1831.
28	Elijah N. Barker,	10	1831.		1831.			
		10	June 28,	Thigh crushed by an anchor.	June 29.	Above knee.	Recovered.	Nov. 1, 1831.
29	Robert Caswell,	13	1832.	White swelling from infancy—injured seven years	1832.			
		13	Jan. 2,	after—limb useless.	Jan. 7.	Above knee.	Recovered.	Feb. 25, 1832.
30	Joseph Fernald,	26	March 21,	Knee str.ined six years before entrance—bones felt	April 14.	Above knee.	Recovered.	July 13, 1832.
				through fistula.				
31	James Ryan,	27	April 25,	Integuments of leg crushed by wagon-wheel.	April 26.	Below knee.	Recovered.	July 17, 1832.
32	Benjamin Nourse,	57	June 8,	Ulcer around leg, 30 years.	Jan. 1833.	Below knee.	Recovered.	March 12, 1833.
33	Mary C. White,	27	July 9,	Abscess inside right knee, 23 years—constant discharge—bones carious.	November.	Above knee.	Recovered.	Jan. 14, 1833.
34	Charles West,	21	Aug. 28,	Injury of knee—subsequently great inflammation.	Oct. 26.	Above knee.	Recovered.	Dec. 18, 1832.
35	Joseph Brugden,	37	Sept. 26,	Chronic disease and extensive caries of tibia.	Oct. 20.	Above knee.	Recovered.	Dec. 22, 1832.
			1833.		1833.			
36	Eliza Low,	21	Jan. 11,	Chronic inflammation of knee—health failing.	Feb. 2.	Above knee.	Recovered.	April 13, 1833.
37	Henry T. Spear,	19	March 2,	Deformed foot, ankle ankylosed and painful.	March 7.	Below knee.	Recovered.	April 10, 1833.
38	John Jordan,	26	May 8,	White swelling.	May 16.	Above knee.	Recovered.	July 11, 1833.
39	Harriet M. Andrews,	23	Oct. 29,	Stiffness of right knee four years—abscess 3 weeks.	Dec. 28.	Above knee.	Recovered.	Feb. 19, 1834.
40	Hosea Sargent,	35	Dec. 25,	Fungus over ligamentum patellæ from blow 2 years before.	Jan. 1834.	Above knee.	Died.	Jan. 18, 1834.
			1834.		1834.			
41	Patrick Donaha,	24	Jan. 29,	Foot crushed by railroad car—same day.	Feb. 8.	Below knee.	Died.	Feb. 13, 1834.
42	Hannah Bray,	14	May 31,	Abscess on back right hand from blow 1 year before.	Nov. 8.	Below elbow.	Recovered.	Nov. 26, 1834.
43	Thomas Marshall,	25	June 20,	Right wrist lacerated by cannon—same day—(face torn, &c.)	June 27.	Below elbow.	Died.	June 29, 1834.
44	Ephraim M. Spear,	37	Nov. 12,	Part of foot amputated three years before for frost-bite—stump not healed.	Nov. 15.	Below knee.	Recovered.	Dec. 17, 1834.
			1835.		1835.			
45	James Neal,	29	April 3,	Left hand shattered by bursting of gun day of entrance	April 8.	Below elbow.	Recovered.	May 13, 1835.

A Table of the Amputations of Large Limbs—Continued.

No.	Name.	Age.	Time of admission.	Disease or injury.	Time of operation.	Place of operation.	Result.	Time of discharge or death.
46	Elizabeth P. Chapman,	31	1835. Dec. 4.	Knee injured by fall one year before.	1835. Dec. 12.	Above knee.	Recovered.	May 22, 1836.
47	Robert Boyd,	38	Dec. 28, 1836.	Sloughy ulcers about right ankle.	Feb. 1836. 1836.	Below knee.	Recovered.	March 31, 1836.
48	Daniel Fuller,	43	Feb. 6.	Indolent ulcer of right foot from frost-bite 14 years before.	Feb. 20.	Below knee.	Died.	March 16, 1836.
49	Jerry Ryan,	31	June 2.	Compound and comminuted fracture of both legs—same day.	June 2.	1 above, 1 below knee.	Died.	June 2, 1836.
50	James Achworth,	28	Sept. 13.	Scrofulous disease of knee.	Dec. 10.	Above knee.	Recovered.	Jan. 30, 1837.
51	Mary Tyrrell,	24	Dec. 16, 1837.	Right knee ankylosed—became—bones carious.	Dec. 17. 1837.	Above knee.	Recovered.	Jan. 13, 1837.
52	Wm. A. Waterhouse,	43	Jan. 8.	Frost-bite of both feet 11 days before.	Jan. 21.	Both legs, below knee.	Recovered.	March 12, 1837.
53	Emstus Jennison,	27	April 25.	Scrofulous disease of knee, four years.	June 10.	Above knee.	Recovered.	July 15, 1837.
54	James Kennard,	22	Sept. 8.	Swelling of knee, five years.	Nov. 14.	Above knee.	Recovered.	Dec. 18, 1837.
55	Martin St. John,	39	Sept. 24.	Leg crushed by bank of earth, day before.	Sept. 24.	Above knee.	Died.	Sept. 24, 1837.
56	Eleanor Ryan,	25	Nov. 23.	Right side of head injured by truck, when four years old, followed by numbness of left foot, pain and deformity.	Nov. 25.	Below knee.	Recovered.	Jan. 6, 1838.
57	John Connor,	80	1838. March 5.	Ankle crushed by bank of earth.	1838. March 5.	Below knee.	Died.	March 14, 1838.
58	Jarvis Gabel,	23	April 12.	Hand lacerated by a steam engine.	April 12.	Below elbow.	Recovered.	May 17, 1838.
59	John Newcomb,	38	April 17.	Fungous ulcer on right leg from boiling water, as counter-irritant.	April 21.	Below knee.	Recovered.	July 14, 1838.
60	William Connors,	45	Aug. 22.	Both legs broken and crushed by stone wall.	Aug. 28.	Above knee (right).	Died.	Sept. 6, 1838.
61	J. W. Fullick,	27	Nov. 5.	Compound and comminuted fracture of leg and knee.	Nov. 5.	Above knee.	Recovered.	Feb. 18, 1839.
62	George Clark,	26	1839. Jan. 16.	Compound fracture of leg—great laceration.	1839. Jan. 17.	Below knee.	Recovered.	March, 1839.
63	William Burbank,	17	March 22.	Wound of hand.	March 22.	Below elbow.	Recovered.	April 22, 1839.
64	Ruth A. Bissell,	18	April 3.	Scrofulous disease of elbow, three years.	June 7.	Above elbow.	Recovered.	June 27, 1839.
65	Robert Fletcher,	37	May 20.	Ulcer on leg, 24 years after injury.	May 25.	Above knee.	Recovered.	July 12, 1839.
66	Jacob Hersey,	72	Aug. 6.	Fungoid ulcer on back of right hand.	Aug. 16.	Below elbow.	Recovered.	Aug. 30, 1839.
67	John Maynard,	29	Nov. 6.	Chronic carious ulcer of ankle.	Nov. 17.	Below knee.	Recovered.	Jan. 10, 1840.

It was not thought necessary to indicate the exact part of the limb at which each operation was done, but it was supposed to be enough to say whether it was above or below the knee. It may be proper to add, that in all the cases below the knee, it is to be understood that the amputation was performed above the ankle.

From this table, it appears that there were seventy operations on sixty-seven patients; three patients having two limbs removed. In one of these three cases, one operation was above and the other below the knee, and in the other two, both operations were below; the first patient died, and the other two did well.

Of the whole number operated on, fifteen died and the remainder recovered, at least so far as to be able to leave the hospital; though it is probable that in some instances the disease may have returned.

There were thirty-four patients who had the thigh amputated, and one of these had the other leg taken off at the same time below the knee; of this number, nine died. Of twenty-three patients whose legs were amputated below the knee, two having both legs removed, five died; and of the ten who had an arm amputated, six below and four above the elbow, one died.

This goes to confirm the prevailing opinion among surgeons, that amputation of the lower extremities is more often followed by fatal consequences than that of the upper, and that death takes place more frequently after amputation of the thigh, than after that of the leg. More than a quarter of those whose thighs were amputated died, while there was but little more than one death in five among those whose legs were removed below the knee, and only one of the ten whose arms were amputated. This patient too died of delirium tremens. The operation to be sure did not arrest the disease, but apparently contributed nothing to the fatal result.

This table tends also to support the opinion, that patients who undergo amputation for chronic diseases are much more likely to recover than those in whom it is performed in consequence of recent accidents. Of the first class, there were forty-five patients afflicted with various diseases, and of this number all recovered but six; and of the remaining twenty-two, whose limbs were removed on account of recent injuries, no less than ten died; being nearly half of the latter and less than one in seven in the former.

This fact certainly gives support to the opinion, that a state of high health is not favourable to surgical operations; and it also tends to show that death after amputation is not by any means attributable in all cases to the operation alone; for if it were, the proportion of deaths should be as large among one class of patients as among the other. 'There can be no doubt, I think, that the result is influenced very much not only by the age and constitution of the patient and the disease or injury for which the operation is performed, but also by the period at which it is done. I have before said that I thought that amputation was "often performed when it might have been avoided." But this remark applies principally to cases of recent injury. In those of

chronic diseases of the limbs, the error is more apt to be of the opposite character; the operation is either not performed, or if done at all, frequently not till it is too late. It cannot be denied, I think, that there is a disposition at the present day to defer amputation too long in cases of diseased limbs; there is an unwillingness to admit that the morbid affection is beyond the reach of remedies, and the operation is too often postponed till other parts become affected, or the system is worn down by continued irritation. At length the limb is removed; but the patient, already exhausted by disease and long suffering, is hurried to his end by the very means that might have saved him, if they had been earlier employed.

If amputation is frequently too long delayed in chronic diseases of the limbs, it is, I fear, very often resorted to in recent injuries earlier than it should be. Many limbs that have been removed, might probably have been saved; but where this cannot be done, it is rare that much inconvenience would follow from a little delay.

In most cases of accident sufficiently severe to justify amputation, the whole system has suffered a great shock, and an operation at this time, before reaction is fairly established, is very likely to cut off what little chance the patient might otherwise have of recovery. While the extremities are cold and the action of the heart is feeble, the local injury is hardly, if at all, perceived, and adds nothing to the patient's sufferings. An operation cannot be required then; and yet how often it is done at that period; the better judgment of the surgical attendant sometimes being overruled by the importunate interference of the bystanders.

If the injury be not so serious as to cause almost immediate death, reaction usually comes on with proper management in a few hours, and then, if an operation be necessary, it can be done with a much greater prospect of success.

With regard to the ages of the patients operated on, it appears that there were

Under 20 years of age 13, of this number 1 died.					
Over 20 and not exceeding 30	"	31,	"	8	"
" 30	"	40	"	9,	" 3 "
" 40	"	50	"	10,	" 2 "
" 50	"	60	"	3,	" 1 "
		Over 70	"	1,	" 0 "

Whole number, 67. No. of deaths, 15.

Boston, March 24, 1840.

ART. VI. *On Retention of the Placenta.* By EDWARD WARREN, M. D.
of Boston, Massachusetts.

THE management of the placenta, in cases where it does not come away speedily after the birth of the child, has in former times been the subject of much controversy. It seems now, however, to be pretty generally understood that it is not safe to wait long for the efforts of nature. Burns fixed the time which might elapse before interference was rendered necessary, at one hour only; and in this he is followed by Dr. James Hamilton and by Dr. Robert Lee, who have written recently on this and other subjects of midwifery. Dr. Collins mentions two hours as the general rule; Denman fixed four hours; and Dr. Dewees is averse to time being made a criterion upon any point in midwifery.

In common cases, we know that within fifteen or twenty minutes after the delivery of the child, the pains return and the placenta is delivered without our aid. In other cases there is longer delay, but there is still no necessity for active interference. As a general rule it may be considered safe and useful; on the return of the pains or when they do not return in season, to pass up the right hand guided by the funis which is drawn down by the left, grasp the extremity of the placenta and by gentle efforts aid the action of the uterus for the expulsion of its contents—taking care of course neither to pull so steadily or so forcibly as to endanger the inversion of the uterus, or to rupture the placenta. By doing thus from time to time, the uterus may be excited to contract if it requires stimulus, and the moment will be ascertained at which the mass can be removed without force. Where this is done with care and attention, it can hardly happen that it will be left in the uterus or vagina, unless there is some particular cause for its detention. In very many cases of atony of the organ, it will probably be found sufficient. Where it is not successful we have various methods to rouse the action of the organ and hasten the expulsion of its contents. When the uterus remains uncontracted, we of course employ friction and pressure upon the abdomen; stimulating injections, injections of warm water; injections of cold water into the cord, &c. before passing the hand into the uterus.

The causes by which the placenta is retained in the uterus, are generally divided into three. The first cause consists in mere atony of the womb, or inability to throw off its contents. This is the most common one. The second, or the one that it is proposed to consider second, is the sudden or irregular contraction of the uterus by which its contents are enclosed before they have had time to escape. The third cause which is happily the most rare, is from adhesion of the placenta to the uterus itself. This is sometimes produced by falls or blows received upon the abdomen. In Dr. Collins's 15654 cases, the hand was introduced into the uterus in sixty-six: thirty-seven of these were cases of atony; nineteen of irregular or spasmodic con-

traction; and ten only were cases of adhesion. Six of these sixty-six were fatal, and these were all of the second kind. It is comparatively a rare thing then, to meet with any serious obstacle to the delivery of the after-birth. The question, however, is not a less important one; how are we to act when instances of this kind occur?

Among the older writers, there was much diversity of opinion in regard to the expediency of interference. Ruysch a physician of ninety years experience, was in favor of leaving the delivery of the placenta to the exertions of nature, because he had always found that separating it with the hands occasioned the most malignant symptoms, and frequently the death of the mother. Heister on the other hand observes that we are furnished with not a few instances where the mother has expired from retention of the placenta; for cases of which he refers to Leporinus *De Secundinis*. Violent pains, floodings, malignant fevers, and death itself, he tells us, are the consequences of its non removal. Smellie is in favor of a middle course. After observing that not more than once in fifty or a hundred times, is there any thing to be done after the birth of the child; and that some of the ancients have alleged that there is no danger upon this account more than once in one thousand cases; he advises us not to torture nature when it is self sufficient, nor delay assistance too long; because it is possible that the placenta may sometimes though seldom be retained, and that the practitioner will be blamed for leaving it behind, if through any accident the womb should be inflamed and the patient lost.

In order to the proper examination of this subject, let us consider in the first place, what are the dangers to be apprehended from the non-delivery of the placenta within a certain time after the birth of the child: and, on the other hand, what are the dangers of interference? Heister's catalogue of disasters as above named, are violent pains, floodings, malignant fevers and death. Flooding is the one which has been most feared. It is the one principally alluded to by Ramsbothan, and was the source of evil in nearly all of his large collection of cases. Denman entertains less fear of hemorrhage. In a collection of twenty cases recently published by Dr. R. Lee, seven of which were fatal, flooding from retention does not appear to have been the source of trouble in any of them. The way in which the placenta is supposed in these cases to have been the source of mischief, is from the irritation it excited as a foreign substance, and from the absorption of pus produced by its putrefaction; at least this is the inference we must draw, if we suppose, that the retention of the placenta was really the cause of death. These cases will presently be examined.

It is necessary according to Burns, Hamilton and Lee, to wait only one hour for the efforts of nature, because the uterus and other parts contract so speedily; and they maintain that the difficulty is only increased by delay. Even at the end of one hour, Dr. Hamilton says, the vulva seems closed, and the vagina thickened, and as time advances these changes progress. The

introduction of the hand into the uterus, they consider as much more easy and safe, than at any subsequent period. On the other hand, some writers consider the uterus as dilatable at a very much later period, as it is within a short time after its contraction.

The dangers attending the forcible delivery of the secundines, are, 1st. That of producing hemorrhage: 2d. Of seriously injuring the patient by the effects attending the introduction of the hand. In the first division of cases in which the placenta is retained, that of atony, there is danger of hemorrhage, whether the placenta be left in the uterus, or whether it be extracted, supposing it to continue in any degree adherent. In the second division the difficulty and the danger consist in the forcible dilatation of the uterus, and of its producing inflammation or the effects of shock or irritation. In the third class of cases, i. e., of adhesion, we have the dangers mentioned by Dr. Hamilton, of lacerating the uterus and of producing inflammation by the pressure of the fingers on the surface of this organ.

There is this great difficulty in settling all obstetric questions; that peculiarities of habit and constitution have a greater influence in this than in any other branch of medical practice. One woman will survive the most ominous mischances, and almost any amount of rough usage, short of the forcible extraction of the uterus itself, by mistake for the placenta; another, under the best management and almost without any untoward symptom, dies suddenly, and without any apparent cause. Thence some practitioners are in the constant habit of interfering by the use of instruments, and otherwise, on very slight occasions of delay; while others object to such interference, unless it is manifestly and imperatively called for. The circumstances which occasion an unfavorable result are so obscure, that a practitioner who has adopted certain rules of action, will readily attribute his instances of success to these rules; while there are always causes enough to which he can attribute an untoward issue. In most of the fatal cases of retention of the placenta, the hand has generally been introduced one or more times into the uterus; other means have been resorted to, consultations held and the woman harassed and worried to such a degree, as might of itself be sufficient to account for the unfavourable progress and termination of the case.

Smellie has ten cases in which the placenta was delivered with difficulty. In the first case, there had been violent hemorrhage which had ceased, but recurred upon the introduction of the hand, shortly after the birth of the child, for the extraction of the placenta. This was succeeded by faintings and death. In his second case, which was similar, he, in consequence, removed only those parts which came away with ease, prognosticating that the remainder would be expelled in a day or two, which accordingly happened, and without any bad consequences. In his third and fourth cases, the hand was introduced and the secundines extracted successfully. In his fifth case, the removal was accomplished with difficulty, the woman complained of a good deal of pain, lost an uncommon quantity of blood, and continued weak

for a long time. Upon this case, he remarks, that he has often thought this hurrying method unnecessary; that in other cases, when the edge of the placenta was found at the mouth of the womb, it has come down of itself at leisure, the woman has lost less blood, and recovered better than where force has been used to extract it immediately. In his sixth and seventh cases, the hand was introduced into the uterus, and the placenta extracted with success; in the former case after a lapse of several hours, and in the latter directly after the birth of the child, the funis being broken by the midwife in attendance. In the eighth case, the secundines were extracted, leaving a part behind which came away in three days, without any inconvenience to the woman, but the smell and colour of the lochia. In the ninth case, the membranes were torn off and left behind for four or five days in the uterus, but were discharged at the end of that time without the slightest inconvenience to the patient. In the tenth case (communicated to Smellie by another practitioner), the placenta which adhered very firmly was removed piecemeal, sixteen hours after the birth of the child, but the woman died a few minutes after the operation. In this case, however, the woman was in convulsions when the practitioner arrived. The case therefore proves nothing with regard to the matter in question, since convulsions may occur after labour, under any circumstances; whether it has been slow or speedy, whether the placenta has been retained or delivered; and they are always dangerous. In this case, however, the fatal result seems to have been hastened if not altogether occasioned by the force employed.

Dr. Rambotham, in his *Observations* published in 1821, gives thirty-five cases of what he calls adherent, retained and disrupted placenta. In his first case of adherent placenta, the patient, a young and delicate woman, was delivered at 12 o'clock. She suffered from excessive hemorrhage, and the placenta was removed by the introduction of the hand a little after 3 o'clock. She did well until the ninth day when she died suddenly. The body was not examined, and the cause of death was not discovered. In the second case, the patient when visited by Dr. R., three hours after the birth of the child, was in a state of almost incessant fainting; having lost a large quantity of blood. He immediately introduced his hand, found the placenta considerably adherent, but separated it very successfully, though not without an increase of flooding during the operation. The uterus contracted, but the patient died in an hour after he had left the house. In the third case, the patient died suddenly from loss of blood, before the placenta was removed. How far the efforts of the midwife to remove it before Dr. R. was called, might have contributed to the fatal result, we have no means of ascertaining. It would require too much space to go through with the whole of Dr. R's cases. He gives us twenty-four cases of adhesion; out of which twenty were attended with flooding, and of these, nine including the three above alluded to, were fatal. His fifteenth and nineteenth were cases of adhesion with contracted uterus. Both terminated favourably after the separation of

the placenta, by introduction of the hand. Case twenty-three, is one of injury from premature removal of the secundines in a case of twins; and case twenty-four is one of inversion of the uterus by pulling at the funis—fatal. All the simple cases of adhesion, therefore, were attended with serious flooding, and this is the only cause of evil alluded to. In most, if not in all, interference was rendered necessary from this cause.

Dr. Ramsbotham gives five cases of "retained" placenta. He observes, that in cases of atony, or the want of active contraction, where the insertion of the funis cannot be felt, no attempt for the present, at least, ought to be made to deliver the placenta by the funis; such an attempt, in the absence of contraction, would endanger an attack of hemorrhage on the rupture of the funis, and would ultimately be unsuccessful. After the lapse of a short time, a temporary accession of after-pain is observable, and the uterine tumour is gradually diminished. In proportion to the degree of contraction and the frequency of its return, is the probability of the natural exclusion of the mass in question. Where there is a gradual draining of blood, the progress and effects of this drain must be carefully watched, and as soon as an impression is produced upon the system, the operator must introduce the hand and extract. The loss of blood in extraction, he says, is usually less in this, than in the preceding case. In the case of sudden hemorrhage, immediate assistance is of course more imperatively required.

In the second variety of "retained" placenta, that caused by hourglass contraction, Dr. R. says, after waiting an uncertain time, hemorrhage generally comes on and continues to increase. The difficulty is not discovered until the introduction of the hand. The contraction is overcome very gradually, the operation causes great pain to the patient, and demands a great exertion of fortitude on her part, as well as of patience on that of the accoucheur. In the third form of "retained" placenta, that of globular contraction of the organ, Dr. R. observes that it remains within the uterus, until time induces its removal, or the relaxation of the organ, with a subsequent effort, allows its escape. In this case, as there is little hemorrhage or other accidents threatening immediate danger, all appearance of hurry must be avoided; the time of interference, he says, must vary according to the circumstances, but he considers that there is little probability of its ultimate removal by relaxation and return of the contractile efforts.

In case twenty-five, there was want of uterine action, attended with a constant draining of blood, repeated faintings, and other marks of prostration. She obstinately refused manual assistance, however, and when she was almost in a state of exhaustion, the uterine action returned contrary to Dr. R's expectations, and the placenta was thrown off just in time to save the patient's life. This took place sixteen hours after the birth of the child. Case twenty-six, one of twins, was attended with dangerous draining. The uterine tumour was found large, and no part of the placenta could be felt by the finger, on the arrival of Dr. R., some hours after the birth of the child. The placenta were removed by introduction of the hand, but the patient

died. In case twenty-seven, the cause of retention was the same and attended with violent flooding. The placenta was removed about four hours after the birth of the child, by introduction of the hand; contraction ensued and the flooding ceased. In case twenty-eight the uterus appeared paralysed by the effect of an opiate. As there was no dangerous symptom, Dr. R. concluded to wait, and the placenta was protruded into the vagina after about nine hours. The twenty-ninth was a case of miscarriage of twins, in about the fifth month of pregnancy. There was no bad symptom, and he refused to offer any manual assistance. Three days after the birth of the child, a part of the mass was removed from the vagina by the midwife, and in a few days more, the whole was thrown off, without any alarming symptom.

Disruption of the placenta, by which is meant the rupture of the general mass, leaving the broken portion behind in the uterus, attached to its original site, Dr. R. considers as in every instance big with impending mischief; and as generally, if not always, the result of mal-practice or mismanagement. A recurrence of after-pains, hemorrhage, succeeded by the expulsion of coagula, are the first symptoms produced. The temporary pains, after a day or two, terminate in a settled uneasiness, which increases and assumes the character of continued tenderness of the uterine tumour. This irritation soon extends to the system, producing rigor, restlessness, watchfulness, anxiety, and febrile symptoms. Pain in the head comes on, and increases till it ends in delirium. The dangerous symptoms progress, the general strength is exhausted, the pulse becomes quick and tremulous, the belly swells and is painful, the fæces and urine are expelled involuntarily, and death closes the scene within a week or ten days after delivery. The terminating symptoms resemble those of the last stage of typhus. If the retained portion should be fortunately excluded, the symptoms immediately begin to decline, and the patient shows signs of recovery.

In other cases, the symptoms are of a milder character, a puriform discharge is kept up from the vagina and the patient gradually gets well. In every case, Dr. R. thinks the patient has to encounter considerable risk.—If she escape the immediate consequences of flooding, she will have to contend with subsequent symptoms arising from irritation and absorption; the progress of which is not under medical control. When these symptoms take place early, the case proceeds with great rapidity and the powers of the constitution soon give way.

Case thirty was one, in which the attending practitioner had failed in his endeavour to introduce the hand. Dr. R. advised delay, as there was no flooding. The woman afterwards refused manual assistance in consequence of the pain she had already suffered. The next morning, the placenta was found lower down, and a greater part was removed by pulling at the cord.—About two days after, the remaining portion was thrown off, without the intervention of any bad symptom.

The thirty-first was a case of excessive flooding, with a portion of placenta

retained. The patient died under symptoms of exhaustion or low fever seven days after delivery. The thirty-second was fatal on about the fourth day, under similar symptoms. In the thirty-third, some vascular portions were left, and came away gradually between the 23d and 28th of the month. In the thirty-fourth case, a portion was retained for fifteen days, after which the patient recovered rapidly. In the thirty-fifth case, the placenta was thrown off entire, four weeks after the birth of the child between the fourth and fifth month of pregnancy. It was then expelled in a perfectly fresh state. From this and several of the other cases, we may learn that the resources of nature are much greater than we should expect, from what has been laid down, in medical books, in regard to the necessity of the speedy delivery of the secundines. It is true, according to general belief, that in the case of premature delivery, the placenta may remain longer in the uterus than under other circumstances, but the other cases which have been mentioned were those of patients confined at their full time.

Dr. Ramsbotham thinks that unless there is some obstruction, the placenta is generally delivered within an hour; and that two hours is ample time to delay assistance. He objects, however, to any specified time. From examination of his cases, in most of which he attended in the capacity of consulting physician, or at least after the child had been delivered by others; it appears that in many he found it necessary to forbear manual assistance: in others, the patients refused it and yet the termination was favourable.—Although he was called at a late hour in all of these cases, he does not appear to have been in a hurry to assist unless the circumstances imperatively demanded it; the principal circumstance which required it being hemorrhage.

Dr. Robert Lee has published in the 29th volume of the London Medical Gazette an account of twenty cases of retained placenta, seven of which were fatal; and in thirteen, there was more or less difficulty and danger produced from portions or the whole of the placenta being left within the uterus, beyond the usual period. He says that, in all cases, if the placenta is not expelled in an hour it should be withdrawn artificially, by passing the hand along the cord to its insertion, expanding the fingers, and grasping the whole mass or as much as can be severed and brought away. This course is the same with Dr. Hamilton's.*

In the first of these cases, the patient was seized soon after delivery with pain in the region of the uterus, quickness of pulse and respiration. The skin assumed a peculiar dusky hue, and pains were felt in the principal joints. She died on the twenty-ninth day after confinement; and on inspecting the body, there was found a small portion of placenta adhering to the uterus near the fundus; and the veins of the part were distended with pus.

In the second case, a large portion of the placenta was left in the uterus. On the third day after delivery, there was foetid dark-coloured discharge from the vagina; pulse feeble; countenance haggard; and delirium. The orifice

* Third Report on Difficult Cases in Midwifery—Case XLVIII.

of the uterus was so firmly contracted that two fingers could not be introduced and the placenta felt. Two doses, of thirty grains each, of ergot, were given but without any good effect, and the patient died on the fifth day after delivery, under the circumstances usually observed when a putrid animal poison is introduced into the system. A large portion of placenta was found in the uterus in a very putrid state.

In the third case, the patient is said to have died on the eighteenth day after delivery, from putrefaction of the placenta. She had appeared to do well for five days; then the pulse rose to 120; rigors came on with loaded tongue, sickness at stomach, diarrhoea, slight occasional cough, and hurried breathing. She died without any suspicions being entertained of disease of the lungs. A portion of the placenta in a sloughy state was seen hanging through the os uteri; and filling up the whole upper part of the vagina. Pus was found in the vessels of the uterus. The lining membrane and muscular coat of this organ where the placenta adhered were soft, and as black as ink. Pleura on right side extensively inflamed. Right inferior lobe hepatized, and several deposits of pus in the substance of the lungs. The pleura at one point appeared to be destroyed by sloughing or gangrene.

In the fourth case, the placenta adhered with unusual firmness to the uterus. An alarming hemorrhage occurred after birth. Several unsuccessful attempts were made to extract the placenta, and it was uncertain at the time whether the whole had been removed or not. A serious affection of the brain took place, and she died about ten days after delivery. The superior longitudinal sinus of the brain was found filled throughout a greater part of its extent, with a solid coagulum of fibrine, and all the veins emptying into it on the right side distended with fibrine. Veins on the left side in a similar condition but to a less extent. There was no trace of inflammation about the uterus and all its vessels were healthy. The placenta adhered firmly, was harder than natural, and of a yellow colour.

In the fifth case, contraction of the cervix uteri took place immediately after delivery of the head, so that much force was required to extract the shoulders and all attempts to remove the placenta were ineffectual. Seven or eight days after delivery, another attempt was made to extract the placenta, a fetid discharge and symptoms of peritonitis having come on. A portion was thus removed. The patient died at last of peritonitis.

In the sixth case, the placenta was extracted entire by dilatation of the neck of the uterus and introduction of the hand, two hours after delivery. On the ninth day the pulse was quick and feeble. There was tenderness over the uterine region, dyspnoea, and pain in the left side of the chest. She died after a few days, and the upper lobe of the right lung was found covered with a thick layer of false membranes and hepatized. There was a considerable quantity of fluid effused into both sacs of the pleura. Considerable curvature in the upper part of the spine.

The subject of the seventh case was seen by Dr. Lee twenty-two hours after delivery. The pulse was rapid; discharge from vagina offensive, and

neck of uterus contracted though not firmly. The hand was passed gradually into the uterus, and the placenta felt adherent throughout to its surface. A small portion was left in, and removed by a second introduction of the hand; great faintness followed. For a time she appeared to recover, but towards the end of the month, the lower extremities swelled, she became delirious, had the usual symptoms of inflammation of the uterus, and died. All the femoral and pelvic veins were found plugged up with coagula. The uterus was twice its natural size and flabby. No portion of placenta was found within it.

In the first of these cases, the symptoms seem to have come on directly after delivery. May it not be said that they arose more probably from exhaustion, than from retention of the placenta? and is not the retention in this and similar cases an effect rather than a cause?

In the fourth case, an affection of the brain came on, in consequence, we are to infer, of irritation produced by a large portion of the placenta remaining in the uterus, this portion continuing perfectly sound. But as several unsuccessful attempts had been made to withdraw it, the irritation produced by these efforts, the anxiety of mind occasioned by its retention, the hemorrhage, or other unknown causes, may have been as instrumental in the affection of the brain as the continuance of the placenta in the uterus. We know that such affections are by no means rare after delivery, and in a large number of cases the cause is altogether hidden.

In the other cases, it is equally impossible to say whether the retention of a portion of the secundines was or was not the cause of the fatal issue. There may have been sufficient evidence to satisfy the physicians in attendance that such was the fact; but the brief manner in which the cases are recorded prevents it from appearing. If we consider the cause of death to be really such as supposed, our inference must be highly unfavourable to the practice of Dr. Hamilton and of Dr. Lee; because, by their process of extraction, a portion of the placenta must inevitably be left in the uterus in almost every case, at least, where there is any adhesion.

The subject of Dr. Lee's next case was delivered on the 28th of June, and seen by him on the 7th of July. Hemorrhage had occurred after delivery, and the placenta was brought away with difficulty, and in a ragged state. July the 7th, the pulse was 120; great giddiness and beating of the temples; offensive discharge from vagina. Injections of tepid water were administered with a weak solution of chloride of soda; cathartics, nourishing diet, wine, and quinine were exhibited, and in a few days the retained portion of the placenta was expelled, and she speedily recovered.

In the ninth case, the larger portion of the placenta was removed two days after the child's birth. There was at this time rapid pulse, loaded tongue, nausea, great headache, dark-coloured discharge from vagina. She recovered.

In the tenth case, the placenta was retained eighteen hours, and then removed by introduction of the hand. No bad symptom followed. The

next six, are cases of successful removal within a few hours after delivery, by introduction of the hand or fingers, in five of them after the cord had been torn off.

In the seventeenth case, the woman was delivered of a child at the sixth and a half month. The cord had been broken off by the midwife, and the parts were so much contracted, that the hand could not be introduced without too much force. The following morning a brisk cathartic was given, and in the evening the placenta came away whole, without any help and with no bad result.

In the eighteenth case, the patient had been delivered of a dead child thirty-four hours before she was seen by Dr. Lee. Discharge from vagina extremely foetid. Three fingers were gradually introduced into the orifice of the uterus; the placenta seized and brought away. Recovery very favourable.

In the nineteenth case, the patient had been delivered of a dead child, of six and a half months, twenty-four hours before Dr. Lee saw her. An attempt to withdraw the placenta failed. The next morning, a cathartic was given, which excited vomiting and purging, and, during its operation, the placenta came away in a yellow indurated state. No bad symptom followed.

In the twentieth case, the placenta was expelled from the uterus into the vagina, but prevented from descending further by a broad smooth band—probably an original malformation—passing from the anterior to the posterior surface. The placenta was divided into two portions with a pair of scissors, and immediately came away.

In several of the cases which have been noticed above, ergot was given in large and repeated doses; but with no effect in exciting a return of uterine action.

In the same volume of the *Lond. Med. Gazette*, (page 922,) two cases of adherent placenta are given by Mr. Chatto. In the first, the placenta was peeled from the inner surface of the uterus, not long after the birth of the child. The recovery was slow, and long doubtful. It was attended with the exhaustion, uterine tenderness, and other symptoms, which occurred in the cases of retained placenta above cited. His second case is the same with the seventh of Dr. Lee's, but given in detail.

In considering the whole of the cases referred to, we perceive that it was necessary in several of them for the most strenuous advocates of speedy removal of the placenta, to allow it to remain until thrown off by the efforts of nature; as they believed the danger of removing it to be greater than that of allowing it to remain. Yet the rule they lay down is, that the placenta must be removed by introduction of the hand in all cases, if not naturally expelled within a very short time. In these instances, and in several where the patient herself obstinately refused manual assistance, we see that the placenta was retained for sixteen or eighteen hours, and even for several days, and then thrown off naturally without any evil consequences. We see,

therefore, what the resources of nature really are. Secondly, taking into view the whole of these cases, we see that the danger of hemorrhage is not so great as was formerly considered. Of course where there is much disposition to flooding, it may render interference imperative; but where no such disposition is evinced, it is not an occurrence we are greatly to dread; though a careful watch should be kept upon the patient so long as the secundines are retained. Thirdly, we may gather from these cases the conclusion, that when a portion of any considerable size is left behind, the consequences are as bad as when the whole is retained; and that even the smallest portion may be a cause of serious mischief, provided the consequences recorded were really the consequences of this retention. We have reason to suppose that a natural and healthy action for the removal of the uterine contents will take place sooner and better when there has been no interference and when the whole portion is left to excite such action, than where only a small part remains. In the latter case, we can hardly expect its removal except from putrefaction.*

In some of Dr. Lee's cases, the unfavourable symptoms occurred too soon for them to be properly attributed to the retention of the placenta, and in perhaps most of the others, there is no proof that this was the cause of the evil and not merely a consequence.

The continental writers, many of them, recommend delay unless symptoms of danger occur. Baudelocque says that in atony of the uterus, when

* It would appear that the placenta may occasionally be absorbed without becoming purulent. Dr. Naegele has given a number of cases of this kind, an account of which may be found in the fourth volume of this Journal, page 244. Dr. Gerbillot, of Lyons, has also furnished a case, vide vol. v, page 530. In this there was no smell or colour in the lochia; the menses returned in about three months; and in due time the patient again was delivered of a healthy child. Dr. Porcher, of South Carolina, has given an interesting account of a case, vol. x, page 391, illustrating the harmlessness of retention in some instances. In this the retention was apparently permanent. There was fetid discharge and great constitutional irritation for about three weeks after delivery, when the patient became well; and continued so with slight exceptions, until last seen by him, about eight months after her confinement. Dr. P. supposes that, in consequence of the adhesion, the placenta became organised. I may here refer to the other papers and selected cases which have been published on this subject, in this Journal; and particularly to that of Dr. Lindsly, of Washington, vol. xix, page, 337, to which I am very happy to appeal as sanctioning the view which I wish to advocate. Dr. Heustis, vol. xv, page 106, has detailed two cases of adherent placenta, in which the patients eventually recovered, but not without severe suffering. In the same volume, page 113, is a paper by Dr. Charlton of Georgia, on the danger of retention of the placenta; and, at page 370, a case by Dr. Harrison, of Louisville. At page 524, vol. xi, is a case occurring in the practice of Mr. Shorland, of London, which illustrates the remarkable powers of nature, in the removal of a placenta and a dead fetus piecemeal; the patient recovering so completely as to give birth to another child within a short period. Other cases of retention and of adhesion may be found, vol. xvi, page 235; vol. xvii, page 527; vol. iii, page 224; vol. iv, page 511; most of which afford evidence that the placenta may be retained without injury under certain circumstances.

there is no hemorrhage, no attempt should be made to extract until the uterus recovers its tone. Capuron says that when the placenta is retained by inaction, or by spasmodic contraction, or by morbid adhesion, all attempt at extraction should be delayed. Gardien says the same in cases of spasmodic or natural contraction of the neck of the uterus.

Velpeau, in the case of atony of the uterus, states that the remedy is sometimes a little wine; sometimes light and nutritious food; sometime rest; but frictions and pressure upon the abdomen are always useful. In the case of rapid contraction, patience and friction on the abdomen. He does not consider it allowable to introduce the fingers for dilatation of the neck, unless there is pressing danger. In the case of strangulation of the placenta by irregular contraction, he says, when the uterus is left to itself, its contractions remove the difficulty; and these may be excited by friction upon the abdomen, and by skilful traction of the cord. Mr. Velpeau seems to be more in favour of interference than the older French writers; yet we find he goes no farther than this. Now can we suppose that he would state the resources of nature to be such, unless he had witnessed them? or can we believe that Baudelocque, Capuron, and Gardien would lay down such rules for non-interference unless they had received sufficient evidence that nature was capable of doing her work unassisted, especially as the opportunities for observation in obstetric cases are greater in France than in most other places? With regard to cases of adhesion, Velpeau believes that actual adhesion is less common than is generally supposed. In slight cases, he says, it can be overcome by skilful management of the cord. He alludes to the opposite opinions in regard to speedy action or delay, and to the statements of Haller, Sandifort, and M. de Saint Amand, in regard to rupture, inflammation and gangrene of the uterus in consequence of efforts made to overcome adhesion; whilst, if putrefaction took place, it would come away piecemeal with the lochia, and absorption would always be prevented by injections; so that the dangers which result from its extraction are greater than those from delay. On the other hand, Velpeau states that serious consequences are often the result of its retention, and that the injury produced by introduction of the hand is owing to want of skill in the practitioner. He, therefore, waits some hours if there is no particular circumstance that calls for speedy action: and longer if the woman is of good constitution and free from anxiety.

As Dr. Hamilton states, that from the earliest period of his life he has always acted upon two rules: the first of which is, always to interfere on the very first threatening of hemorrhage; and the other, to wait no longer than one hour, where there was no untoward symptom, he can be no judge of the safety of delay, or of the resources of nature when left to herself. On the other hand, the advocates of delay must speedily have means of ascertaining if nature was altogether incompetent to the task.

Dr. Hunter, in consequence of the dangers which he found to attend the forcible removal of the placenta, adopted the rule of leaving it entirely to the

exertions of nature. His pupils, we are told, followed this course; and for some time all went on well, the patients were generally delivered within sixteen or eighteen hours, without any bad result. Finally some unfavourable cases occurred, and the practice was changed.

Dr. Hamilton tells us that his first rule—to interfere upon the slightest appearance of hemorrhage—is one which is better observed by the continental practitioners than by the British. He says, also, that it has been a general conclusion among British practitioners, where there are no untoward circumstances, that time and patience are all that are required. There are certainly few who are willing to go as far as he does in the practice of hasty interference.

Retention from atony of the uterus, and hourglass contraction, Hamilton maintains to be always the result of bad management. Morbid adhesion of the placenta, he says, is the only cause he has met with for the last thirty years, in cases of which he has had charge from the beginning. In opposition to the opinion of Ramsbotham, he maintains that this condition can be discovered by the symptoms before introducing the hand.

“When the placenta morbidly adheres, a gushing of blood follows the birth of the infant, uterine contractions succeed, each pain being followed by another gush, while the uterus is contracted into a round form, and yet there is no lengthening of the cord.”

Dr. Hamilton employs the same method in this as in other cases. “Pressure, for the purpose of separating the mass, is made exclusively upon the fetal surface; and when all the separate portions are detached, they are to be pushed down into the vagina, after which as in the former case, the parietes of the uterus are to be forced into contact; and any coagula or remains of the secundines are to be scooped out in the course of withdrawing the hand.” He objects to the common practice of peeling off the placenta; the hazard of exciting inflammation on the surface of the uterus by the pressure of the fingers; and secondly, the great risk of lacerating the substance of the uterus, by tearing off a part of the placenta literally blended with it.

Dr. Hamilton tells us that his experience has proved to him that this practice is safe and judicious. The uterus contracts firmly upon the portions that are left, when it is necessary to leave any; there is no danger of hemorrhage, and when the indurated part separates by sloughing, the probability is it may be thrown off by the natural efforts, failing which its expulsion may be promoted by artificial means. If it was really the case that the portion thus left could do no harm, one strong objection against interference would be removed: for hardly any one will deny that this process must be attended with much less hazard and inconvenience than the one to which he objects. But if on the other hand, the retention of a portion of the placenta is as dangerous as the retention of the whole; and if we have really less to hope from the natural efforts in the former case than the latter, our conclusion as to the value of this process must be different. The objection to a fixed time for interference, especially to so short a time, would remain at any rate. The

proper time must vary in every case. Older practitioners will of course always be guided by their own opinions and experience; but to the novice, the rule that he must proceed to the extraction of the placenta in all cases at the end of one hour, must be highly mischievous; and the more so as it allows him no time for obtaining the aid of other professional advice.

In case of hemorrhage, or other unfavourable occurrence, it may be necessary to proceed to the removal of the placenta at once. Perhaps, even in this case, nature will do more for herself than we are disposed to admit: still the universal practice is to adopt immediate measures. We should be highly censurable in allowing our patient to lose a large quantity of blood; or in allowing a dangerous drain to go on while we stood idle; and this is the only manner in which we can interfere to advantage. The duty is therefore imperative, to remove the placenta at once in the best manner it can be done, and insure the contraction of the uterus as soon as possible. Attempts may indeed be made to produce this contraction, and to arrest the flooding by other means in the first instance, and we must be governed by the urgency of the case as to the time we may allow those means. On the other hand, supposing that copious flooding has taken place after the birth of the child, and ceased before our arrival; the case is different. More blood will necessarily be lost in the operation, and if the patient is already exhausted, this cannot be without danger. Our duty is then to delay and watch. In the cases of atony of the uterus, we have the greatest reason to hope for benefit from delay, and unless a draining is going on, there is less danger from such delay. In such cases, we must use our judgment even whether the patient shall be allowed entire rest, or whether we shall continue our efforts by friction, &c., to promote contraction of the uterus. In some cases, entire rest is of most importance. In atony of the womb, the danger of hemorrhage is less than in the cases of adhesion.

Dr. Dewees, with great reason, disapproves of time being made a criterion in cases of midwifery. Before the birth of the child, the pains which have continued regular, for hours, will sometimes subside and not return for twelve or twenty-four hours; and, in some cases, not for days. We do not, in these circumstances, think it necessary to proceed at once to extract the child. It probably would be done by many practitioners, if it could be without occasioning the certain destruction both of child and mother. Fortunately it cannot be done; and these cases often terminate even more safely than those where the progress of labour is rapid. In the same manner, in some cases, owing to prostration on other causes which we cannot divine, the pains which generally return speedily after the child's birth, will be entirely wanting. The fact is, the uterus is a whimsical organ, and the attempt to confine it to regular rules and times of action, is not only difficult but dangerous. In some of the cases which have been cited, its action was checked by opiates, in others by exhaustion. Now as the degree of exhaustion will depend upon the constitution of the patient, the difficulty of the

labour, and other circumstances of the case, it is by this condition that we must be governed in its management. Sometimes the delay of uterine action will be owing to causes altogether hidden from our inquiries. We have, however, every reason when there are no unfavourable symptoms to expect that it will return after a longer or shorter time, and that the labour will be favourably terminated by spontaneous efforts. We may, therefore, wait securely, merely employing such means as have already been mentioned: to wit, friction and pressure externally, injections if we judge expedient, and gentle traction. Velpeau notices, however, that when the uterus is in a state of atony there is more danger of its inversion by pulling on the cord, than under other circumstances. It will evidently be better if we can promote the expulsion of the mass by exciting, in the first place, the contraction of the uterus. When there are no bad symptoms, it will very rarely be necessary to introduce the hand into the uterus. Dr. Collins introduces it for the purpose of stimulating the organ to contract. When other measures have failed it is hardly probable that this will succeed before the removal of the placenta; but the attempt should undoubtedly be made when it has been determined to introduce the hand, and at all events after removal of the placenta, the hand should be retained in the organ until it contracts upon it. The greatest reason for delay in these cases, however, is that when the placenta is removed. While the patient continues in a state of prostration it may be exceedingly difficult to make the uterus contract, and a dangerous draining of blood may take place.

In the second condition of retained placenta; that produced by hour-glass contraction, the rule is to pass up the fingers and introduce them slowly and successively into the neck of the uterus; making them form a conical wedge, and thus overcome the contraction. That there is both difficulty and danger in this process, whether applied to the hour-glass or the natural contraction if not evident from reasoning, is proved by the cases of Dr. Collins, his six fatal cases being all of this kind. We might naturally suppose that the spasmodic action would go off of itself after a short time, and this, as we have seen, M. Velpeau and the other French writers encourage us to expect. In the case of what has been called spasmodic contraction of the os uteri, and which Velpeau considers as merely the natural but too sudden contraction, he advises, in like manner, that the remedy be patience and gentle friction upon the abdomen. A case of this kind occurred recently to the writer. A lady was confined of a six months child. After the labour had been going for some time, the hand of the fœtus was found in the vagina. As the fœtus was found to be lying quite loose in the uterine cavity, the pains very strong, and parts fully dilated, the hand was put back and the feet seized and drawn down. In this manner, the body was delivered at once, but the uterus suddenly contracted, the pains grew slight, and there was much difficulty and delay in delivering the head. The uterus then contracted firmly into a ball, and it was found impossible to remove the pla-

centa without violence. As she was perfectly comfortable, and there had been no loss of blood, and seemed to be no danger of any such loss, I thought it best, after waiting about an hour, to abandon the attempt to deliver the placenta. The next morning, about nine hours after the birth of the child, I found her still very comfortable, though her sleep had been interrupted by slight pains which had been occasional through the night, and still continued. Upon passing up the hand guided by the cord in the usual manner to its insertion, I succeeded after a few gentle efforts, during the pains, in removing the placenta, a solid mass having the perfect pear shape form of the uterine cavity. The patient suffered no inconvenience; in a few days she was about the house, expressing herself and appearing as well as if she had never been confined. As she felt herself perfectly well, it was impossible to keep her within rules, and she left the city within ten days after her confinement. If force had been used, however cautiously or gently, to dilate the os uteri, she must have suffered severely. After such rapid contraction, the os uteri is doubtless contracted much more firmly at first—whether there be or be not spasmodic action, than after a few hours rest. After a short rest, the organ will generally renew its efforts for the expulsion of its contents. What then is the consequence when the placenta is left within the organ thus contracted? Where there are no untoward circumstances, the same course will be pursued as in the case just mentioned. The pains will not altogether subside, and the vessels of the placenta will be emptied of blood, it will be compressed into a solid mass: and be finally excluded without bad consequences of any kind. I repeat that we have more reason to expect the natural and healthy exclusion of the mass when left entire, than when the larger portion has been removed; or when the woman has been harassed by continued efforts for its delivery. In many of the cases we have cited, the probability is that the natural exclusion would have been effected sooner had not the various attempts to promote delivery by the introduction of the hand and other measures, and the consultations held by the anxiety thus cited, interfered with the operation of nature. When a small portion of the placenta only is left, we are not to expect its exclusion before putrefaction commences. Even when this is the case; or when the whole has been left, and owing to any particular cause, it has not been excluded before gangrene has commenced, it will still generally be thrown off without injury. Fatal results will sometimes occur, but I maintain that we have no proof that these results are attributable to the retention; and that they are not, at least sometimes, the effect of a common cause.

I come now to the most difficult condition—that of *Adherent Placenta*. In this case, we have more danger of hemorrhage to apprehend, than in either of the others:—whether we remove it at once or let it remain. Dr. Ramsbotham remarks that his 15th, 18th and 19th cases “prove demonstratively (if such proofs were necessary) the utter inability of the uterus to detach the placenta under such circumstances of morbid adhesion; and the

necessity of the introduction of the hand for its manual separation." He considers the natural resources of the system as altogether inadequate to effect the separation. We have then to choose between the common practice, and that of Dr. Hamilton. We are thus placed between Scylla and Charybdis. In the former case, according to him, we incur the hazard of exciting inflammation of the surface of the uterus, and of lacerating a portion of its substance. On the other hand, if we employ his procedure, we have almost the certainty of leaving a portion behind. We have, at any rate, this certainty; that if we always persist in removing the whole of the adherent portion we shall sometimes lacerate the uterus; and sometimes produce a dangerous degree of irritation and sometimes a dangerous hemorrhage: on the other hand, if we leave the portion which adheres too firmly to be removed without violence, we shall sometimes have hemorrhage, and sometimes results from irritation and putrefaction at least as unfavourable as if the whole placenta had been retained. Under these circumstances, is it not worth consideration whether the dangers of separation and extraction are not as great as those of delay; and whether nature has not really some resources even in this case?

It seems to me that in obstetric cases, we do not place half as much confidence as we might do in the resources of nature. Might we not reasonably expect that as soon as the placenta is no longer needed, nature would set about removing it in a healthy manner? When we know how much is done by the animal economy in the removal of the foreign bodies lodged in different parts of the body, and how much is done also in cases of extra-uterine fœtation, and even in many cases of miscarriage—have we not reason to expect what is really a much slighter exertion of the *vis medicatrix*? We know also how great the powers of the system are, for the removal of redundant or diseased portions. The connection of the placenta with the uterus is in general severed either at the birth of the child or within a short time after. May we not reasonably suppose that this separation may sometimes be delayed a little longer than usual, but yet be completed naturally? Where the adhesion is morbid, the difficulty of separation must be greater; but yet in a person of good constitution, where it is not complicated by other unfavourable circumstances, it may be effected naturally. At the worst, when putrefaction takes place, the connection will of course be dissolved. The opinion of Velpeau upon this subject, has already been quoted. The course which he recommended—to wait some hours where there are no circumstances that call for speedy action; seems to be the most rational. If it be allowed, as I think it must be from what has been said, that there is danger in the manual separation of the placenta, we ought to be certain that the consequences of delay will be still more dangerous, before we resolve upon interference.

However it may be in other branches of medicine, in midwifery the great danger is of doing too much. There is every thing to lead us to interfere

when there is any apology for our doing so. Nothing is more difficult than to stand by the patient who is in a state of suffering and alarm and see hour after hour pass without our doing any thing to relieve her. In such cases it requires more fortitude to forbear, than to render assistance.

After the birth of the child the woman naturally expects to be free from further trouble; and the accoucheur, as well as the patient, very probably worn out with the tediousness of the labour, has his own desire to escape added to his wish to save his patient farther anxiety and delay. Under such circumstances, the temptation to finish the labour at once, by removing the placenta, is very strong; and there is much more danger of rashness than of timidity.

It will surely not be supposed from what has been written, that I would wish the secundines to be abandoned to the natural efforts after the birth of the child, as a general rule. It will always be desirable to have them come away as soon after the usual time of waiting, that is to say, the first fifteen minutes, as possible. I believe much can be done by judicious assistance, where the natural efforts are insufficient; and that cases which require delay will be rare. My object has been to show that the placenta may be left in the uterus with safety, when there are no unfavourable symptoms, and that the danger of forcibly removing it, will often be much greater than that of allowing it to remain. I believe that a general rule requiring the mass to be removed at all events, and especially within a certain time, is highly pernicious. The practitioner, however, is not discharged from close attendance until it is removed, nor can the patient be considered exempt from danger.

ART. VII.—*A case of Rigidity of the Lower Jaw, cured by division of the anterior portion of the Masseter muscle of the left side.* By THOMAS D. MUTTER, M. D., Lecturer on Surgery, &c.

In January, 1839, I was requested to visit Harriett Ann Wolcott, aged 16, originally of Milford (Delaware) but now residing at No. 41 Cherry Street, for an affection of the mouth under which she had been labouring since her fourth year. It appears from the history of the case, that from some cause or other, she was seized when about four years old, with acute inflammation of the cheek which terminated after a long time in resolution, but in consequence of having been obliged to keep the mouth nearly closed during the whole treatment, a permanent rigidity of the masseter or a portion of it, on the affected side, was produced. Upon examination the left side of the jaw appeared much smaller than the right, and the integuments about the chin (on the same side) were much more closely connected with the bone, than is

usual. The whole left half of the inferior maxillary bone, is in reality smaller than the right, and instead of presenting the natural angle at the junction of the ramus with the horizontal portion, is rounded off, so that it appears much straighter than it should be. There is no scar, nor any evidence of previous ulceration either within or without the cheek, neither does there exist any adhesion between the cheek and bone, but a strong fibrous band formed of the anterior portion of the masseter muscle was readily detected by introducing the finger between the teeth and cheek. This band is so short as effectually to prevent any thing like motion (except to a very limited extent) of the inferior maxillary bone, and the space between the upper and lower teeth is so small that an instrument only three lines in thickness can freely be introduced between them. The patient is of course unable to chew, and has lived almost exclusively upon broths; nor can she protrude the tongue; and her teeth, in consequence of the impossibility of passing a brush between them, are in a very bad condition. Her articulation is also exceedingly defective.

From the peculiar malformation of the jaw it became a question whether or not a division of the masseter muscle would be productive of much benefit. In as much, however, as the operation was very simple, but *slightly* painful, and above all attended with little or no risk, I determined to perform it, and afterwards endeavour by means of a lever, gradually to force the jaws apart.

Having placed my patient in a good light, I passed the forefinger of my left hand along the space between the cheek and teeth until it was arrested by the band already alluded to. She was then requested to open her mouth as much as possible in order that the band might be put upon the stretch.—Using my finger as a director, I next passed along it, an instrument shaped like a common gum lancet, though larger, and having but one cutting edge, until its point rested behind the band. By pressing firmly upon the handle, the blade was made to penetrate the masseter muscle about its lower third, until the point could be felt between the muscle and integument. The band was then divided by drawing the knife forwards and at the same time directing it outwards and downwards. The section was indicated by a slight snap, and the propriety of the operation at once made manifest by the improvement in the case. For example the finger could now be passed between the teeth, which before the operation was impossible. The hemorrhage was slight and the pain scarcely complained of. The oozing of blood having in a measure ceased, I next introduced the lever (see fig. p. 91) with the blades in contact, and adjusted them accurately to the dental arches; the screw was then turned until the patient complained of pain. The space between the teeth was now large enough to permit the finger to be passed to the fauces, or to speak more accurately, it was about half an inch between the incisors. The patient was put to bed with the head elevated, and ordered to be kept quiet.

A few hours after the operation she was seen by two of my pupils, Messrs.

Van Wyck and Finlay, who reported that she complained of slight soreness about the part, but had no headache, fever, or any thing, in short, requiring attention.

On the following morning when I saw her, the same favourable condition of things obtained, and although she had worn the lever all night, there was but very little pain, and no swelling in or about the cut. The instrument was removed for a short time in order that a little nourishment might be taken—when again introduced, I found that several *additional turns* of the screw might be made, and I succeeded in increasing, by three or four lines the space between the teeth.

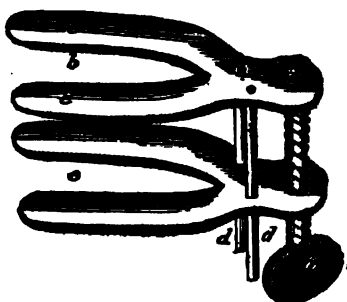
Nothing of any material interest occurred in the subsequent treatment—every day the screw was turned a little, and after the fourth or fifth, she was allowed to pass an hour or two without the instrument. Gradually this period was increased, and at the present time she wears the screw only at night. During the day she wears a small plug of ivory between the molar teeth, and is enabled at the same time to pursue her usual task, (gold leaf packing, which requires the use of the breath,) without the slightest difficulty. Six weeks have now elapsed, since the operation was performed, and already the space between the teeth is *one inch and three lines*; the tongue is protruded without the slightest difficulty—the patient *chews* her food as well as if she had always been accustomed to do so, and the chin on the left side is filling out—the angle of the jaw is of course not very much altered as yet; I have no doubt, however, that time will remedy this defect. It is well known that, in cases of chronic glossitis, tumours of the gums, &c., where the angle of the jaw either on one or both sides, in consequence of the pressure, becomes more obtuse than natural, the *original* angle, provided the cause be removed, will, in a few months, be regained. The same change I expect to take place in the case just reported, and in order to hasten it, the patient will be requested to use the lever every night, and also to use the plugs of ivory during the day, until it be accomplished.

Remarks.—Rigidity of the lower jaw is a defect occasionally met with, and may depend upon a variety of causes. For example, it may be occasioned by adhesion between the cheek and gums on one or both sides—cicatrices from burns, ulcerations, &c., in the vicinity of the mouth—chronic intumescence of the tongue—permanent contraction of the temporal or masseter muscles; the growth of tumours involving the articulations, or some portion of the upper or lower maxillary bone;—ankylosis of the temporo-maxillary articulations; and finally malformation of the bone itself! Each of them will of course require a treatment peculiar to itself.

I have sought diligently, however, to discover a case precisely similar to the one reported, relieved by a section of the muscle in fault, but have failed in so doing, and on this account chiefly have I presented it to the profession.

The lever employed in this case after the section of the muscle, is the result of the ingenuity of Mr. Rorer surgical instrument maker, and answers

the purpose for which it was designed, much better than any other that I have seen.—It consists of two parallel plates, b, c, so shaped as to fit accurately upon the dental arches, each plate being also furnished with a superficial gutter on one side, in which the teeth rest. This groove is of much importance, as it prevents the instrument from slipping to one side—the parallelism in action of the blades is secured by the two rods d, d, which pass through the handle of the upper blade, and are attached firmly to that of the lower. In the application of the instrument, care should be taken to place the blades in contact before the screw is turned, and they should also be carried as far back as possible so as to rest upon the molars.



a Screw.
c Lower Blade.
e Groove.

b Upper Blade.
d Guides.

This case was seen before the operation, and I believe since, by Prof. Horner, and since by Drs. Nancrede, Pettus, and several medical students.

ART. VIII. *Case of Artificial Joint of the Fore-arm.* By DR. P. FAHNES-
TOCK, of Pittsburg, Pa.

VALENTINE WYANT, the subject of this case, *stat.* 23 years, is a native of Germany, and now resides at Bedford, Pa. On the 11th of October, 1836, whilst on a hunting excursion, his gun was accidentally discharged, causing a compound comminuted fracture of the fore-arm about four inches below the elbow joint. About an inch and a half of the substance of the ulna was carried away, the radius was obliquely fractured, and the soft parts were extensively lacerated and contused. He was placed immediately under the care of Drs. Watson and Barkely of Bedford, by whom every thing was done that skill and science can perform. After a long course of treatment, the wound was united, but the injury was only in a measure repaired. The ulna had formed a ligamentous union, whilst the fractured extremities of the radius were separated about half an inch, the intervening space being occupied by muscular substance.

The patient first presented himself to me on the 24th of July, 1837. He stated that he had consulted various practitioners, the majority of whom recommended amputation, to which he was resolved never to submit, whilst a few advised him to seek professional aid from the surgeons of Philadelphia. Having determined upon an operation, I invited Drs. Gazzam, Addison, M'Dowell and Wright to meet me at 10 o'clock on the following morning. The limb having been examined by three medical gentlemen, I commenced the operation by making a longitudinal incision, deep enough

to expose one of the fractured extremities of the radius, which passed each other to a considerable distance. It was found that the lacerated muscular substance had united in such a manner around these extremities that they were separated to the distance of half an inch. Having removed the intervening soft parts, the next step of the operation was to bring into view the fractured ends of the bone. On depressing the hand and elbow simultaneously the fractured extremity next the hand projected, from which was removed by the saw about one inch and a quarter. The other extremity, that part next the elbow, was found so deeply imbedded, as to render it necessary to make a transverse incision in order to be enabled to use upon it Hey's saw, and from which was also removed about three quarters of an inch.

During all this time the hemorrhage was inconsiderable, as the principal blood vessels had been destroyed by the original wound. The arm was now dressed as for a compound fracture, the usual splints extending from above the elbow to an inch beyond the fingers being applied. As the discharge soon became profuse, and the weather was warm, it was necessary to renew the dressing daily, until the 18th of September, fifty-six days after the operation. At this period, it was found that the radius had formed a bony union, and the wound had nearly cicatrized. The arm, however, was very feeble, owing to a default of support in the ulna, which had originally united by ligament.

I now determined to make an effort to remedy this imperfection and I adopted, for that purpose, the mode of operation first proposed and successfully practised by the late Dr. Physick.

On the 28th day of the following December, I passed a seton needle armed with a piece of silk brade through the limb, between the fractured ends of the bone. The seton having been suffered to remain between four and five months, it was found that perfect ossific union had taken place. It was with much difficulty that the seton was removed.

Since this period, he has suffered a second fracture of the arm at the same point. It united, however, by bony union, and he has recovered in a great measure the use of the member. The only defect is in the hand and fingers, owing to the great destruction of parts by the original injury. Let the patient, however, speak for himself.

Bedford, January 11th, 1840.

SIR:—I have the satisfaction to inform you that ever since the operation performed by you on my arm which was severely broken by the accidental discharge of a gun, it has continued to grow better. I am now able to use it moderately without pain or difficulty; it is gaining strength every day; and the physicians of this place tell me that the bones are completely knit, of which I have no doubt from my present feelings compared with the pain I suffered before you operated upon it. I will be in Pittsburg in the spring, when you can judge for yourself. Yours, Respectfully,

VALENTINE WYANT.

To Dr. P. FAHNESTOCK, *Pittsburg, Pa.*

ART. IX.—Cases of Hemeralopia cured by the Exclusion of Light. By
W. L. WHARTON, Surgeon United States Army.

HAVING noticed in a Boston Medical Periodical, the case of a patient affected with a partial loss of vision during the day, for whose relief it was suggested to protect the eyes from the stimulus of the sun's rays, I am induced to state the following cases of Hemeralopia which were successfully treated by the exclusion of light.

Modern writers have adopted the term Hemeralopia as expressive of night blindness, and the discrepancy of opinion which has existed, as to the applicability of the words "Nyctalopia" or Hemeralopia to either day or night blindness, would appear to have arisen from the Greek etymology of the words, both meaning day blindness.

It became necessary in the winter of 1834 to concentrate a large military force at Fort Mitchell, Alabama. This position is proverbial for its healthiness. Diseases of a miasmatic origin are unknown there. Owing to the insufficiency of quarters to accommodate the troops, many of them were necessarily encamped.

February 3, 1834.—Sergeant W. and privates A. and R. of the 2d Regiment of Artillery, presented themselves at the hospital tent: had suffered partial loss of vision for several nights previously, the defect commencing with the decline of day; the last night were affected with total blindness; general health good; complained only of a slight uneasiness in the temporal regions. The pupils of the eyes much dilated, although not immovable; Ordered to the hospital that the eyes might be examined at night, when, the blindness returning, the pupils were found more dilated and apparently fixed—unaffected by the sudden introduction of a lighted candle into the room.

15th. No improvement has resulted from an active resort to general and local remedies. Induced to consider the blindness in the first instance the effect of debility on the retinae, consequent to a highly excited condition thereof, caused by rays of light emanating from large camp-fires, and icicles with which the surrounding trees were covered, and protracted by the daily impression of light on a part already debilitated. I was led to infer that the total exclusion of light would enable the retina to recover its tone. The patients were accordingly assigned to a room completely darkened, in which they remained until eight o'clock in the evening. On being relieved from their seclusion, it was discovered that vision was in a degree restored; the pupils somewhat contracted. Remanded back to the room, where they remained until ten o'clock the next night; the sight was entirely restored. *18.*—Returned to duty.

Fort Moultrie, Sullivan's Island, South Carolina, May 5, 1835.—Private D—1st Artillery, entered the hospital: general health good, has been in the habit of fishing off the breakwater, occasionally for some weeks past; says that for three or four nights previously his vision has been defective; last night seized with total blindness, slight pain in the left temporal region; pupils in the day much dilated and sensitive, at night are more dilated and fixed. Abstaining from the use of medicines, he was placed twenty-four hours in a room which was darkened, at the expiration of which time the pupils had recovered their sensibility; vision restored; returned to duty.

Fort Johnson, Smithville, North Carolina, September 9, 1835.—Private H—1st Artillery entered the hospital afflicted with hemeralopia, produced by same cause and attended by similar results, as in the preceding case.

Fort Gibson, Arkansas, February 6, 1839.—Amongst the numerous sick of the 4th Infantry, which reached this position, were seven cases of hemeralopia. In one case I was informed the disease had existed three months, no other case less than two weeks. The men had been on severe duty in the mountainous sections of North Carolina, undergoing great fatigue, the eyes affected by rays of light reflected from snow. Had received the best attention the circumstances of the service would allow. With the exception of one case of constitutional scorbutis, the patients were in good general health. The pupils of the eyes presented the same appearances as in the preceding cases. No medicine was administered; ordered the patients into a darkened room, where they remained for thirty-six hours; at the expiration thereof, the vision of six of the patients was restored, and they returned to duty. In the case of the scorbutic patient, it required twenty-four hours longer to effect a cure.

Fort Gibson, Cherokee Nation, West.

ART. X.—Case of Calculus—Enlarged Prostate Gland—Thickened and Sacculated Bladder—Bifurcation of the Ureter—Abscesses in the Kidneys. By GEORGE SUTTON, M. D., of Aurora, Indiana.

FROM what I can learn of the early history of this case, which is very imperfect, Mr. Caldwell, twenty years previous to his death, fell while descending a flight of stairs, and received an injury across the small of his back; this was followed by violent pain in the lumbar region, which confined him to his bed for several months; as the more violent symptoms subsided, dysury succeeded connected with vertigo; this last symptom wore off gradually in a few years, but the dysury continued until complete retention of urine took place, and for ten years previous to his death he had to depend entirely upon the catheter for the evacuation of his bladder. Occasionally he was attacked with the most excruciating pain in the region of the bladder and perineum, to allay which he would resort to narcotics in large doses until he became so habituated to them, that he considered life intolerable unless under their influence. In December, 1838, during a violent attack of his disease a small calculus passed into the urethra and lodged about two inches from the glans penis. A neighbouring physician was sent for, who made an incision through the urethra and removed it. After this he was comparatively free from pain for several months.

In the spring of 1839, Mr. Caldwell came to Aurora to reside. I was shortly afterwards called to attend him during a violent attack of one of his paroxysms. I found him under the stimulating effects of opium. His pulse about one hundred, rather soft; tongue dry and red around the edges; constant and ineffectual desire to pass his urine; tenesmus; most violent pain in the region of the bladder and perineum; the pain occasionally passing towards the lumbar region; numbness of the thighs; skin hot and dry; his mind very much excited. He informed me that he was about seventy years old; that he had been subject to these attacks for twenty years; that he was never entirely free from pain except while under the influence of opium or morphia; that he had been under the treatment of a great number of physicians and some of the most eminent in Cincinnati; that no one had ever been able to detect the presence of stone in his bladder, but that he had always been confident of

their existence there and the passage of the stone in 1838 confirmed him in his opinion. He also stated that about two months since, he had felt another stone descending into his urethra and that it had lodged near the neck of the bladder, and the symptoms he now felt were precisely similar to those which preceded the expulsion of the stone before. He was very anxious I should perform the operation of lithotomy, offering a handsome remuneration. I sounded him in several positions but was unable to detect the presence of calculi, and considering him to be labouring under a disease of the prostate gland and bladder, I prescribed as a palliative the warm bath, anodyne injections, mucilaginous drinks, ʒi of ol. ricini, followed by the blue pill, &c. The warm bath and anodyne injections speedily produced relief and he became comparatively free from pain. He frequently called upon me afterwards requesting that I would perform the operation of lithotomy on him, and so confident was he of the existence of stone in his bladder that he would declare; "if all the physicians in the world were to tell him to the contrary he would not believe them;" and since the passage of the calculus in 1838 the only treatment he had been willing to receive, except during the paroxysms, was for the direct removal of stone. Finding no person in this neighbourhood that would operate for him, he went to Cincinnati for that purpose and placed himself under the care of Professor Mussey. The Dr. has since informed me that he sounded him carefully and was unable to detect any stone. He told him, however, there might be calculi embedded in the coats of the bladder, but he considered his case a disease of the bladder and recommended a course of treatment accordingly. Our patient remained in Cincinnati about a week, and after his return his spirits were entirely prostrated. For eight or nine months previous to his death he had borne his sufferings with the hope that an operation would produce speedy and permanent relief, but having failed in this last resource and finding no one that would operate on him, his firmness of character, for which he was remarkable, forsook him, and about a week before his death he was seized with diarrhœa which terminated his existence.

The treatment he had received from the different physicians whom he had been under, had been principally for disease of the bladder, but it does not appear that any course of treatment had done more than palliate his sufferings.

In presence of a young physician and several of his friends I made the following examination.

Autopsy, eight hours after death. *Exterior*, unusual emaciation, slight rigidity of the upper and lower extremities. *Omentum* remarkably contracted, scarcely perceptible. Intestines of a dark red colour, very much injected. *Stomach* small and contracted to about two inches in breadth, its internal surface almost entirely destitute of rugæ. It contained about half a gill of viscid mucus slightly tinged with bile. The mucous membrane of a dark red and abnormal colour throughout, but more particularly near the pylorus, where it was softened and in several places ulcerated. *Pancreas* of a deep orange colour, the head of it about the size of a hen's egg and very much indurated, it finally adhered by cellular membrane to the stomach and duodenum. *Liver* rather small, healthy with the exception of the right lobe a small portion of which was indurated; gall bladder moderately distended with bile and healthy. *Kidneys*; the right one small and of a dark pink colour almost as firm as cartilage and full of cicatrices; in its superior half was an abscess about the size of a pigeon's egg containing a thick whitish pus. The pelvis of the kidney was filled with muco-purulent matter, and its mucous membrane as

well as calices and papilla of the kidney were almost entirely destroyed; but one or two papillæ remaining. The ureter was from half to three quarters of an inch in diameter, and greatly thickened; its mucous membrane of a deep red colour and in several places ulcerated. About two inches above where it passed into the bladder it bifurcated, one branch containing three small calculi the largest about the size of a pea, the smallest that of a radish seed. These were situated three quarters of an inch apart, and the ureter between them was impervious resembling a ligament. The capsula renalis was about one-fourth of its usual size and nearly the consistence of cartilage.

Left kidney rather smaller than natural, ureter about half an inch in diameter, and at its upper and lower extremity the mucous membrane of a dark red colour, two or three of the papillæ were destroyed and the mucous membrane around them of a deep red. In the body of the kidney there were several large cicatrices and near the upper part was a small abscess about the size of a hazel nut filled with a whitish pus.

The bladder was surrounded by fat and cellular tissue, and almost resembled a solid substance, its coats being between half and three quarters of an inch in thickness. Its cavity which would scarcely hold half a gill of fluid, contained a small quantity of muco-purulent matter. Its mucous membrane was almost entirely destroyed, having a fibro-cartilaginous appearance. There were numerous cells or pockets throughout the parietes of the bladder communicating by small openings with its cavity. Two calculi were found in the bladder, one nearly a quarter of an inch in thickness and three-quarters of an inch in its longest diameter; the other about half an inch in diameter and about a seventh of an inch in thickness. The nucleus of each of these calculi were small gravel resembling those found in the ureter; they had become lodged beneath a protuberance of the prostate gland, and deposition of calcarious matter had been formed around them. These calculi were found precisely where our patient imagined he felt them and it is rather singular, as we were unable to detect them by the sound, that he should have been so correct in his feelings. The prostate gland resembled a hard scirrhus tumour and measured in length three inches and a half; its lateral diameter three inches, its vertical two inches and three-quarters, the circumference over the longest diameter about nine inches and three-eighths. From the upper part of this gland is a protuberance about the size of a walnut projecting into the bladder and almost filling its cavity; it is globular and is perforated by a number of openings leading to the urethra.

There are at least ten passages to the bladder each large enough to admit a common catheter; some of them passing through the body of the prostate gland, but most of them perforating its protuberance.

The urethra contained a great number of cells or pockets, and was divided by tendinous septa which separated the passages to the bladder. These passages as well as the cells had evidently been made by the constant use of the catheter which was sometimes introduced during the most excruciating pain. I have the bladder which I preserved as an interesting specimen of pathological anatomy.

The friends being anxious that the examination should be discontinued, the thorax and head were not examined.

March, 1840.

MONOGRAPH.

ART. XI. *On Dyspepsia, or Indigestion.* By N. CHAPMAN, M. D., Professor of the Theory and Practice of Medicine in the University of Pennsylvania. (Continued from No. L, page 341.)

DYSPEPSIA by neglect or improper management is prone, as I have said, to exchange its primary state of nervous irritation for that of inflammation, presenting a new aspect, and requiring a variation of treatment.

Conversions of this sort, though in most instances slow, I have known to take place very quickly. Chronic gastritis of a primary character having already engaged my attention, I might pass over the secondary form of it with a reference only, to what has been previously stated. Continuing, however, for a length of time, it may lead to a variety of affections of other and remote organs, which, perhaps, have not hitherto received sufficient notice, and, among these, that of the lungs is especially interesting.

Connected with the more peculiar and expressive phenomena of gastritis, there is here an irregular, diminutive fever of a hectic type, with suffusions of the cheeks, parched skin, sallowness or duskiness of complexion, a hard cough, scanty limpid expectoration, heat in the hands and feet, pain in the side or breast, and wasting of flesh and strength. The case, in short, has so many of the features of incipient catarrhal, or, indeed, of tubercular consumption, as to be readily confounded with either of these affections.

An exalted irritation or phlogosis of the stomach, long endured, may extend itself to the lungs, arising even from sordes, or worms, or indigestible substances swallowed, productive of very serious pulmonary mischief—of which examples are of no unfrequent occurrence.

As long ago as 1805, I was consulted by a young woman with cough, purulent expectoration, hectic fever, and the other phenomena of apparently confirmed phthisis. Being satisfied from the appearance of the tongue, constipation of the bowels, the nature of the discharges when procured, and other phenomena, that the pulmonary symptoms depended on a primary disorder of the alimentary canal, I instituted a practice accordingly, and on the restoration of its healthy functions, the secondary disease entirely disappeared.

In 1820, I was called into consultation with the late Dr. Monges to a boy, who, with most of the symptoms of the preceding case, particularly the copiousness of purulent expectoration, was so much reduced, as that the portions of the bones on which he rested had protruded through the integuments in several places. Discovering that his abdomen was tumid, his tongue furred, his appetite capricious and depraved, and that he was subject occasionally to convulsions, I was led to suspect the existence of worms, and, under such an impression, anthelmintics were administered

In less than one week, sixty-eight lumbricoides were evacuated, and from that moment he became convalescent, and rapidly got well.

We learn from Hildanus, that a woman, having swallowed a metallic button, was soon attacked by pulmonary irritation, which eventuated in purulent expectoration, &c. The button, however, was finally vomited up, and she speedily recovered. Much such cases are recorded by Bartholini, occasioned by the ingurgitation by a boy of a swine's tooth, and by Percival, from a nutmeg in the stomach of a girl. Dumeril has more recently noticed another, very analogous, induced by a nut shell retained in the stomach for some length of time.

Do we not know, in further illustration of the same principle, that stomach coughs, so denominated, are very common, and that cynanche trachealis, asthma, and angina pectoris, may be brought on by certain intractable ingesta? Croup, especially, I have several times seen occasioned in children by gastric repletion: and twice by worms, of which, other instances are noticed by the late Professor Barton, and in the foreign journals.

Mostly, in instances of a chronic nature, the irritation of the mucous membrane of the stomach is extended only to that of the lungs inducing chronic catarrh or bronchitis. But where the tubercular diathesis exists, real phthisis may be developed.

Further, by the play of sympathies, other structures become involved, and particularly the duodenum, the liver, spleen, pancreas, all of which have been found highly affected, displaying phenomena, separately or mingled, with those of the stomach. It is an interesting fact, that sometimes a secondary affection is ultimately more violent in its character, and destructive in its consequences, than the one from which it is borrowed. This is strikingly exemplified in the history of the disorders of the chylopoietic viscera, and above all, as regards the liver, it suffering more than the stomach. By virtue of a law of the animal economy, the primary is usually aggravated by the secondary lesion, till the latter from an increase of vehemence acquires an ascendancy when the former begins to abate, and may be entirely supplanted and cured.

Cases, however, of this description, obviously have no claims to present consideration—a new disease, in a different part, being produced by this assumption. To the *enduring morbid condition of the stomach*, our attention is to be limited, as the root still sustaining the progeny from it, which, being eradicated, the latter of necessity perish. In relation to these and all other sympathetic affections, this is a distinction to be observed, as a guide to practice. Having, however, already treated of the idiopathic states of gastritis, I must be content by a reference to what has been said, and proceed to present another view of the subject.

It happens, as we have seen, that in the commencement of dyspepsia, there is often a great preponderance of nervous irritation, constituting what I suspect is termed the *irritable* or *sensitive stomach*, which sometimes endures for a considerable period. This, without passing into phlogosis, or its other more ordinary terminations, may run into the chronic state and then is entitled gastralgia, in contradistinction to chronic gastritis.

Let me explain this point a little further. Inflammation is a complicated process, consisting of three stages, of which the first is nervous irritation, and the next congestion. But it does not uniformly observe so regular a course, and may especially, be arrested in the beginning when simply irritation prevails, which, like inflammation, becomes protracted,

with some alteration of character. In this sense it is that gastralgia should be understood, or in other words, as a lingering painful irritation of the nerves of the stomach, independent of phlogosis. Great care has lately been taken to establish a diagnosis between these two conditions, and a summary of the distinctive features I formerly presented.

As of a purely neuralgic nature, I shall hereafter expatiate on this affection in the different stages, when I reach the general consideration of the subject. Enough at present, therefore, may it be to mention that, at first, or while extreme irritability or sensibility prevails, of internal remedies the most emollient and soothing are to be employed in conjunction with the external topical means already indicated, and when the acuteness of sensibility is somewhat appeased, the prussic acid, the nitrate of silver, the sulphate and oxide of zinc, the acetate of lead, the sulphate of quinine, the preparations of steel, alone or with the opiates or henbane, have considerable reputation, and are the most efficient means of cure. The preparations of strichnine, also, have recently been much commended, though I am much inclined to suspect, from what I have seen of their effects, more from theory than any positive evidence of their efficacy.

Next, I am to advert to some secondary dyspeptic affections of the stomach, arising from the sympathies of that organ with other parts of the system previously diseased.

Deeply interesting, however, as the subject is, it were now out of place to enter into any details as to the pathological states productive of such effects, the examination of them not appertaining to my immediate inquiry—and, for a similar reason, I shall now merely remark in relation to the cure of the gastric disorder, that it being dependent in its nature, it can only be overcome by the restoration of the organ whence it may be derived to its healthy condition. The same course is to be pursued in relation to any other special cause of the affection, such for example, as hemorrhoidal tumours, it being essential to the cure to remove the direct source of irritation.

As my knowledge, however, increases of dyspepsia, the more am I satisfied that, as a secondary affection, it is rarer than perhaps is commonly imagined. Cases so supposed to originate, I believe, are consequent mostly on original gastric irritation, the lesion of the stomach being lost sight of in the subsequent more violent and permanent derangements of other parts.

Let it be recollected, how much that viscus is troubled by the abuse of medicines, and from the introduction into it of every variety of substance, which the wants or caprices of appetite solicit, not to cite other causes,—and the peculiar liability of the intestines, the liver, the spleen, the pancreas, the uterus, the brain, and indeed, every other structure, to participate in its sufferings, we can hardly resist the conclusion: Yet these organs, thus aggrieved by the stomach, return on some occasions in a spirit of retributive justice, the injury they receive from it, with the severest retaliation.

To bring this discussion to a close, it only remains to consider the regimen appropriate to dyspepsia. No part of the investigation is more important, and hence, in treating of it, I shall enumerate all those particulars required in the delivery of precise and definite instructions regarding it. Little will our remedies avail, unless aided by a regulated diet, and a proper attention to some other circumstances of the regimen.

The stomach being the immediate seat of the lesion, and the recep-

tacle of food, nothing, surely, need further be said on the importance of selecting such nutriment as shall be the least offensive to it, and which demands the slightest exercise of its functions in so crippled a condition. It is not, however, true, that the most digestible articles are always the most proper as is commonly supposed. The contrary sometimes happens, or the blandest, though less tractable to the powers of the stomach, are better suited. Thus, among other examples, the mucilages, from their inirritative qualities, may be singularly appropriate, slow and difficult of digestion, as they are proved to be. But, inasmuch, as dyspepsia in its progress, varies, the diet must be accommodated accordingly.

We are first to notice what is adapted to the earliest stage of the disease, where extreme nervous irritation prevails, with an intolerance of aliment, except the very mildest. Little else will be endured here, than barley or rice water, or rennet whey, or thin gruel, sago, and such like articles. Cases of this sort, however, are rare, and when they do occur, may be soon brought to bear a more substantial diet. Then, for the morning, and evening meals, milk is to be preferred.

It will itself often cure cases, which have proved very obstinate. But it is sometimes required, that the patient live solely upon it, not having even bread allowed him. Milk is applicable to nearly all the varieties of dyspepsia, and its complications. It relieves gastrodynia, pyrosis, cardialgia, and palpitations. But it is objected to it, that it disagrees with many persons. That there are idiosyncrasies, forbidding its use, is very conceivable—though I have seldom met with such instances. It may be puked up and turned, which ought not, as is generally thought, to discourage us from further trials. The first step in the digestion of such fluids is coagulation. What, on the whole, was said long ago, by Cadogan, is nearly true;—that milk is most proper, when it appears least suitable—having the power of correcting the morbid states of the stomach, and hence, remedial in its preliminary effects. Nevertheless, it may be inadmissible, especially when it accumulates in large masses of a cheesy nature, productive of gastric oppression, or unrelenting obstruction of the bowels, with the alarming consequences of such conditions.

Three very remarkable instances of the kind, I have met with. Not many years ago, I had brought to me a mass, which in length, breadth, lobulated structure, and general aspect, so closely resembled the pancreas, that it might, at a glance, have been mistaken for that organ. On tearing off a part of the integument, which was a coating of coagulable lymph, I found the interior to consist of compact cheesy matter. As an explanation of the phenomenon, it was stated by Dr. Tydiman my informer, that several months before, on a journey from South Carolina, his coachman in whom it occurred, drinking copiously of milk, was soon after seized with colic, which though relieved, so many of the symptoms of hepatitis occurred that the case was treated under such an impression. By a violent effort of vomiting, the mass was brought up—convalescence commenced, and an entire recovery ultimately took place. The preparation is in the museum of the Pennsylvania University.

Not long afterwards I saw, with Dr. Physick, a lady, who for the cure of dyspepsia, went to the country, where she lived for upwards of three weeks entirely on milk. Constipation speedily ensued, which gradually increased till it became utterly unrelenting, and she was brought to the city with an enormous distension of the abdomen, and as much pain as in the severest

labour. By a scoop I removed an immense mass of cheesy matter from the rectum, and subsequently by enemata and purges it continued to pass away till the aggregate amounted to six or eight pounds—as we conjectured.

More recently I was called to a little girl of four years of age—in very much the same situation, who had been placed for some time on a strict milk diet. Being told that an enema could not be administered from an insuperable impediment to the introduction of the pipe of the syringe, I made an examination, and discovered the rectum loaded with the same sort of cheesy matter, of which I am sure, more than a pound must have ultimately escaped. Examples very similar have been reported by Bartholini, Elliotson and other writers.

As a substitute for milk where it, for any reason, cannot be taken, cocoa may be directed, or chocolate, prepared with boiling water, which is to be permitted to become cold, then to skim off the oily and seculent matter, collected on the surface, re-boiled and poured on cream and sugar. Even better than this, perhaps, is a very light and agreeable preparation of the article vended in this city also under the title of *dyspeptic* chocolate. Disgusted with these articles, the patient may take black tea. Coffee and green tea should rarely be admitted.

The articles for dinner, are game, or white poultry, or beef or mutton. Nor veal, nor lamb, nor geese, nor ducks, nor fish, are proper. The first two of these prohibited articles are objectionable, from the well ascertained fact, that all young meats, owing to their fibrous and stringy texture, are less digestible, and the rest on account of their grossness, or otherwise offensiveness to the stomach.

Every variety of soup is pernicious, as liable to sour. The essence of beef, however, is allowable, and where the stomach has lost its tone, we direct a modicum of salted or smoked meats, thoroughly boiled, which are particularly useful in the weakened stomachs of inebriates. The same may be said of some of the condiments, as Cayenne pepper and mustard.

Little vegetable matter should be taken, the best of which is rice, or the roasted potato. There are, however, some exceptions to this rule. Cases occur where a vegetable seems to answer better than an animal diet. But such are exceedingly rare. Leaven bread stale, and without butter, is to be preferred. Crackers, usually directed, are apt to oppress. Bran bread, as it is called, made of unbolted flour, is sometimes useful, particularly by keeping the bowels open. It seems, however to operate mechanically, by the irritation of its indigestible husks, and should, therefore, be withheld, whenever there is the least phlogosis or increased sensibility, in the primæ viæ. Great injury I have seen from the too indiscriminate use of this article, which is not certainly always, as is pretty generally supposed, in the doggerel rhyme of an old poet,

“ ———The household bread,
Curative of the aching head,
And constipation's other ills,
For which folks swallow salt and pills.”

Cakes, as well as toast, either dry or otherwise, as usually prepared, are improper. To the former there may be, perhaps, a single exception. Cases I have met with among our southern and western people, with whom the cake made of the Indian meal agreed better than wheaten bread,

probably from their being more habituated to it. As to dry toast, I wish to be explicit, since an opinion almost universally prevails opposed to the one I have expressed. But there is little doubt of my being right. Generally, the slice is thick, and very imperfectly toasted, in which state it is so disposed to fermentation, that in a few minutes it becomes sour to the smell and to the taste. Better made, it may be wholesome. Even this, or bread in any shape, is sometimes inadmissible.

Nearly every species of dessert is detrimental, including fruits, nuts, &c. Yet I have known ice creams beneficial, or at least harmless, taken in the intervals of the regular meals.

The stomach has been pronounced by a very sagacious observer, Sir William Temple, to be, in one respect, like the schoolboy, always doing mischief when not employed. This short aphorism contains a vast deal of practical wisdom in relation to dyspepsia. By eating often, while the system is adequately nourished, the stomach escapes oppression. To this very general rule, there may be occasionally an exception. The stomach being irritable, or too much fatigued, to perform its functions, an entire intermission of food, for a longer time, may enable it to recruit its energies, as is illustrated in the effect of rest on some other organs. We have here an instance, where "all work and no play" may not answer.

It is known to me, that the propriety of the precept I have cited, and endeavoured to enforce, has been contested. By eating frequently, it is said, chymification and chylification, which follow each other in succession, are interfered with, and that such an interval should be allowed between taking food, as to enable the first of these processes to be completed before the second commences. But the allegation is preferred on false premises. From the most authoritative experiments, it appears that these two operations are simultaneously performed, or as quickly as chyme is prepared, it passes into the duodenum, to make way for a fresh layer of food to come in contact with the sides of the stomach, as well as to be more exposed to the action of the gastric juice.

Greater force exists in the objection, that by this practice the habit of the stomach is interrupted, and from so wide a deviation mischief must ensue. But we are not speaking of the sound condition or the usages of this organ under such circumstances. Dyspepsia deranges every thing connected with the functions of the stomach, and we are called to view it thus diseased rather than physiologically. Not now to decide peremptorily on the effect of more frequent meals than society has established, I will only ask, how can adequate replenishments of aliment be attained, in this case, except by such repetitions of it as I have proposed where no large quantity is admissible at once?

Be it as it may, however, the amount of food must be small. Error in *quantity* in this respect is, perhaps, even of more importance than error of *quality*. It has been well remarked, that "the weakest stomach may digest a *little* of any thing, and the strongest *much* of nothing." As to the sum of solid animal food to be allowed, this must be accommodated to the circumstances of the case. Not more than an ounce will be borne by some stomachs at a time, while in other instances several ounces may be tolerated. The best rule as to quantity, as well as quality, is the absence of all uneasiness. Consciousness of any thing in the stomach, affords evidence of its disagreeing. Digestion, when salutary, diffuses agreeable impressions over the system, without any positive sensation in the stomach

itself. But we cannot always trust this matter to the patient himself. Definite instructions are then to be given to the attendant, and to attain absolute precision, in certain delicate cases, the food should be weighed.

It is a predominant opinion, that eating in the evening is very prejudicial, and hence prohibited. No doubt the digestive energies, in common with those of all the great functions, are impaired at this period. The system is worn down, and seeks repose as the natural restorative. Concurring in the general denunciation of *suppers*, I must still insist that the rule excluding food altogether, cannot unexceptionably be received. Cases I have seen where exhaustion was considerable, the stomach without tone, and annoyed by the harassing sensations of emptiness, with nervousness and morbid vigilance, that were relieved by a little food at bedtime, and even at a later hour, when such a state of wretchedness came on.

As to diet, however, some more precise directions are demanded.

1. Do not mix the food, since, exactly as it is simple, so is the facility of digestion, and the absence of uncomfortable consequences. That a contrary doctrine, deduced from some experiments, is maintained, I am aware. But these were made on a healthy stomach, and whether true or false in that relation, the fact is unquestionably otherwise as to the disordered state of the viscus.

2. Chew the food well, and slowly, that it may be thoroughly imbued with saliva, on which account it is better to take it in large pieces than mince it, except mastication cannot be performed from the want of teeth. It has been said that the American people are remarkable for the rapidity with which they eat, and some ascribe the prevalence of dyspepsia among us, in no slight degree, to this cause. No one doubts that the bolting of food is pernicious.

3. Drink moderately at meals. They who indulge freely, or abstain entirely, err alike in this respect, as a certain degree of fluid is promotive of digestion. The celebrated Mr. Abernethy differs from me in some degree on this point. He thinks that no fluid should be allowed while eating. Being questioned as to the regulation of diet by a female friend of mine, with his usual oddity, he replied to her: "Live, madam, as a cow—eat your food—take a drink afterwards—lie down, and go to sleep. Did you ever know a cow to have dyspepsia?"

4. Exercise is not to be taken for an hour or two following a repast. We should rest, though not sleep—the one state advancing, and the other retarding the digestive process.

5. Nor is it less important to postpone eating after exercise where it has been considerable. This, though it may sharpen appetite and perhaps invigorate digestion in the robust, has a contrary tendency in the valetudinary—the stomach, under such circumstances, pretty uniformly sharing in the general enervation from fatigue.

6. But, above all, take care that the food be well cooked. More important is this than the nature of the article itself. There is scarcely any thing which may not be so prepared as to render it digestible—and, conversely, by negligence or the want of skill, every thing may become pernicious. The predominant taste in this country, derived from our ancestors, the British, prefers imperfectly dressed food. Bloody effusions may be constantly seen to issue from fresh meat on our tables, when carved—the salted and smoked are served up dry and hard, and vegetables too raw. But, what is worse, it is intentionally so, since in this state, while food is

deemed more palatable, it is believed to be also more wholesome. Now the great purpose of cooking is to perform that for which the teeth are designed, or to co-operate with them in breaking down the texture of food, so as to make it easier of reduction to a pulp by the powers of the stomach, and to accomplish which, it must be thoroughly dressed. Boiling or stewing, particularly the latter, is most effectual to this end, though in broiling or roasting, a greater amount of the juices of meat is retained—at the same time it is more savory and nutritious, and may be made very tender. The worst of all modes is frying, from the impregnation of the meat with extraneous oils, the whole becoming empyreumatic, and the meat tough.

The appetite being sometimes feeble, it is necessary to excite it. With this view—

1. Keep from the patient the knowledge of what he is to eat, and surprise him with something inviting.

2. Do not disgust him by the smell of meat. To avoid this it may be cold, and which indeed is usually preferable.

3. The dishes should be small. It often happens that we shall eat with avidity of a nice little bit, when we would loathingly reject a large joint of meat.

4. The food ought to be frequently changed.

"Occidit miseros crambæ repetita."

Ovid.

"The same stale viands, served up o'er and o'er,
The stomach nauseates."

Wynne.

This occasional variation renders it more attractive, and at the same time, promotes digestion. Confined to one article, however wholesome, the stomach will soon languish and fail to derive nutriment from its sufferings like the lungs, from the continued inhalation of the same air, the respiratory process under such circumstances becoming uniformly less actively performed.*

5. As of the last importance, the mind should be preserved tranquil and happy at the moment of the meal. Disturbed by anxiety, fretfulness, anger, or any painful emotion, even the reception of unpleasant intelligence, the inclination to eat, at once ceases. By the Poet of nature, this was understood, and well expressed.

—— "Read o'er this:
And after this, and then to breakfast
With what *appetite* you have."

Of drinks, I believe, on the whole, water is best. Malt liquor, either sound old porter or ale sometimes answers, though it more frequently disagrees. Wine, however pure, is for the most part pernicious, generating acidity, which induces irritation. Exceptions, however, are occasionally to be met with, in states of extreme atony of stomach, and general wretchedness, and where it seems to be instinctively called for, it proves cordial, and may be even more permanently useful. It is to such that St. Paul's advice to his friend Timothy is just, as well as kind, "to drink a

* Johnson on Dyspepsia.

little wine for thy stomach's sake, and thy other infirmities." Most of the highest authorities concur with the Apostle, and from which I cannot dissent. The best wine is Sherry or Madeira. Port, which from its tonic properties, is occasionally recommended, constipates and proves otherwise pernicious. Weak old brandy or whiskey and water are also beneficial under like circumstances, and the previous habit of using them, having prevailed, they must be conceded. But whatever is granted let it be sparingly. Deluging the stomach defeats all our purposes, by diluting the gastric liquor, and so distending the viscus as to prevent its contractions, thus weakening or destroying the agencies, by which, the digestive process is executed.

As detailed, such are the leading precepts to be observed in the dietetic management of genuine dyspepsia. Not the least cause of perplexity in regard to their just application arises from the apparent similarity of cases, dependent on different conditions of the stomach.

Thus, among other instances, whenever that organ is irritable, it exhibits so many of the phenomena of phlogosis, that the two states may be confounded. Now irritability may be owing either to inflammatory excitement, or total absence of it, extreme weakness, and as the one or the other state prevails, so must the diet be adapted, in the former to consist of bland fluids only, and in the latter, particularly when of a gastralgic nature, of solids as exclusively. Blunders, on this point have been repeatedly witnessed by me, and where on an exchange of a mild, and sparing mucilaginous, for a nutritious animal diet, or the converse, according to circumstances, very salutary results took place.

Constantly, have we, reports of the most discrepant sorts of nourishment agreeing with dyspeptics—partly to be referred to individual idiosyncrasies, though, certainly much more to the pathological state of the case. Even of some remarkable cures I have heard, by a free indulgence in sour beer, raw turnips, raw cabbage, or fruit. Three such extraordinary cases came within my own knowledge, which were speedily relieved, the first, by living exclusively on the morilla cherry, the second on fresh roasted pork, and the third, on mush made of wheaten flour, with vinegar, to which the persons were driven by an irresistible instinctive propensity.

It has occurred to me, from observing these singular effects, that sometimes, the least digestible articles might rapidly operate beneficially by setting up a new action subversive of that on which dyspepsia depends. This is the *modus operandi* of many of our medicines, particularly the stimulants and tonics, and why should not alimentary substances, equally intractable to the resources of the stomach, occasion similar results. The conjecture, however, is thrown out more as an explanation of the anomaly, than as a suggestion to be carried into practice.

Nevertheless, some regard should be paid, in the regulation of diet, to the taste, habits, longings, and other peculiarities of persons, as well as to their own experience, as to what agrees best with them, though at the same time, we must be careful not to be led astray by the force of their propensities. The common adage, that every man of forty, who is not a fool, becomes, in this respect, his best physician, is not true. They very often deceive themselves, and impose on us, by the lusts of appetite, or by a repugnance to submit to our discipline. What drunkard, for instance, would not declare that whiskey agreed with him, and where is the gourmand, that does not sigh at the loss of his ample meal?

National tastes, to a certain extent, are likewise to be consulted. Thus a Frenchman would turn with disgust from an article, which delights the palate of an Englishman, or reversely—and the same sort of predilections and aversions, are found among the natives of different sections of our own country. The Virginian doats on his bacon and greens—the Yankee on his codfish and potatoes—and the Pennsylvanian on his sour crout and goose, each, perhaps, wondering at the singular preference of the other for such dishes.

To yield to a certain extent to the likings and dislikings of the patient, I say, may be proper. The food at which the palate revolts, cannot fail to be ill received by the stomach, and probably prove very offensive to it,—while, on the contrary, what is eagerly solicited or relished, may be cordial and invigorating to the digestive powers.

Concluding this portion of our subject, I wish it to be distinctly understood, that the dietetic precepts which have been delivered, are not absolute, or of universal applicability. Not more diversified, scarcely is mankind in the expression of countenance, than in constitutional modifications. The term salutary, or otherwise, in regard to his nourishment, is relative, in a degree, and experience abundantly teaches, that an article very harmless to one, may be to others directly the reverse. "To assert," says an old writer (Van Swieten), "a thing to be wholesome without a knowledge of the person for whom it is intended, is like a sailor, pronouncing the wind to be fair, without knowing to what port the vessel is bound." My object has been to generalise in framing this set of instructions, and to the discrimination of those for whom they are intended, must I confide the accommodation of them to special exceptions.

In some of the more obstinate forms of dyspepsia, much advantage is derived from remedies addressed to the system generally. The warm bath, taken twice or thrice a week, is useful, and so has the cold bath proved in other states of the disease. On the same principle, frictions especially with fine salt, over the entire surface are serviceable. The skin, in the protracted cases of dyspepsia, is dry, and with a very feeble circulation. Whatever, then, is calculated to reinstate its healthy functions must not be overlooked.

Exercise is so highly useful, and above all, riding on horseback, that it may itself cure the disease. My remarks, of course, apply to the atonic dyspepsia. Under other circumstances, rest and quietude, till the phlogistic diathesis is overcome, is scrupulously to be observed.

Too little attention is here commonly paid to clothing. No fact is better established than that of the reciprocal and most intimate consent between the cutaneous surface and the alimentary canal. Warmth of the skin ought hence to be maintained—and for this purpose, flannel is to be worn at all seasons. We are aware of its utility in the bowel complaints, and it is not less so in those of the stomach. Extreme sensibility to cold existing, direct a waistcoat and drawers of buckskin.

I have previously remarked how apt cold feet are to induce dyspepsia. With the slightest predisposition, they seldom fail to excite, or, if it exists, to exasperate the disease. As precautionary, worsted stockings with buckskin socks should be worn, and something irritating, as Cayenne pepper, may be applied to the soles of the feet. This is both a preventive and curative expedient, and particularly of the sympathetic affections of the head, as cephalalgia, and also of depraved vision. Even a case of

incipient gutta serena I have known to be cured by irritations constantly kept up on the soles the feet.

It should not escape notice, that the want of sleep and inquietude at night is among the most uniform and harassing incidents of the disease, exhausting strength and exasperating the nervous derangements. The use of opiates is objectionable from their constipating effects, though the acetate of morphia, endermically applied, sometimes succeeds very well. Nervines of every description, such as camphor, the oil of valerian, Hoffman's apodyne liquor, are resorted to, though for the most part unavailingly, and are pernicious to the stomach. The most certain relief is afforded by rising in the morning early, taking exercise during the day, a stimulating pediluvium on going to bed, and very frequently by a dose of the super-carbonate of soda, or of ley prepared as formerly mentioned.

In the event of other measures failing to cure dyspepsia, a trial of some of the waters of our mineral springs should be made.

Those of the best repute are of New York, Pennsylvania and Virginia. Many are the instances of their beneficial and even restorative effects. Excellent as they all are, the latter, however, are preferable, as well from superiority of climate, as the greater diversity of qualities. Embosomed in a mountainous region, where the heats of summer never penetrate, and from which the diseases of the season are excluded, there is, within a very limited space, a group of some ten or fifteen of these waters of decided activity, including natural baths of every gradation of temperature and difference of medication. Not a little is to be ascribed to their medical properties, though, in a just appreciation of them, we must also include the advantages of the change of scene, a purer air, a more cheerful society, and the interruption of pernicious habits and associations. It is in these modes that a long journey over a delightful district of country, or a visit to a European metropolis, or a residence in some of the genial climates of that section of the world proves so effectual.

The preceding observations plainly relate to the reduced shapes of the disease. Excitements, on the contrary, are to be abstained from, under other circumstances of dyspepsia, and I am quite sure, from my own experience, that every description of mineral water is prejudicial and inappropriate. Ever doing good in the active state of the disease, of which we hear occasionally, it is by the revulsion created on the bowels, the kidneys, or skin or some other emunctory—a principle too uncertain, as well as dangerous in its tendencies, ever to be hazarded, or, at least, adopted as a rule in the treatment of such cases.

But what will all I have said accomplish, unless the remote and exciting causes of the disease be carefully avoided. Let it, therefore, be imperatively inculcated on a patient, that he is altogether to renounce those habits and pursuits which, directly or indirectly, may have contributed to the production or maintenance of his case. If he be intemperate, he is to become sober: if he uses tobacco, opium, or any other baneful article, he is to relinquish it: if he be luxurious, he must institute a reform in his scheme of living: if he be indolent, he should be awakened to enterprise: if he be studious, he is to abandon the midnight lamp: if he be afflicted, we must soothe his misfortunes by holding out to him the promises of hope and the gilded prospects of the future.

These cases are often very troublesome, and trying to the patience of a practitioner, from the great predominance of hypochondriasm. Exceed-

ingly querulous, from the very nature of the disease, the dyspeptic is eternally complaining of the most preposterous feelings, and is apt, after a time, to exhaust our benevolence and sympathy. But this is wrong. Whatever may be the extravagance of his conceits, they arise from the intimate dependence of our moral nature on our physical constitution—and being the result of diseased action, become legitimate objects of medical care. Treat him therefore kindly, and even with tenderness. Encourage him, to the last, with the expectations of cure—and never, on this or any other occasion, should a patient be consigned to the horrors of despair.

"Sunt verba et voces, quibus hunc lenire dolorem,
Posais et magnam morbi deponere partem."

Hor.

"The power of words, and soothing sounds appease
The raging pain, and lessen the disease."

Francis.

MEDICAL EDUCATION AND INSTITUTIONS.

ART. XII.—*Medical Institutions, Diseases, &c., at Athens and Constantinople.* By PLINY EARLE, M. D.

GREECE has so recently been released from the bondage of the Ottoman, her present government has been of so short duration, and her people, as a body have hitherto made so little progress in civilization, that no one can reasonably expect to find her institutions for the promotion of medical knowledge, or for the treatment of disease, either so numerous or under so thorough discipline as those of the United States, or of the nations of Western Europe. The only medical school in Greece is at Athens; it is a department of the University in that city. It was established six or seven years since, at the time of the adoption, by government, of a system of general education for the people. The faculty consists of seven professors, and the several branches of the science are divided among them as follows, viz: 1. Special Pathology, Special Therapeutics and Clinical Instruction; 2. General Pathology, General Therapeutics, and the History of Medicine; 3. Anatomy and Physiology; 4. Operative Surgery; 5. General Surgery; 6. Obstetrics and Materia Medica; 7. Public Hygiene.

The professor of Operative Surgery is a German; the rest of the faculty are, I believe without exception, natives of Greece, who have mostly been educated in the schools of either Germany or France. A medical society including among its members the Professors of the medical school, the physician to the king, and several other practitioners in the city, holds a meeting, once a week, in the basement story of the University. The usual exercises consist in the reading of an original essay, upon some branch of the science, discussion thereupon, and verbal reports of important or interesting cases which may have occurred in the practice of any of the members.

The Military Hospital which was erected about three years since is the largest building in Athens. It is about 150 feet in length, and constructed of blocks of unhewn stone. It is situated on the south eastern side of the Acropolis, in the vicinity of the ruins of the arch of Adrian and the temple of Jupiter Olympus. Its accommodations are sufficiently extensive for 200 patients; there were, however, but about 70 under treatment in December, 1838. It contains five commodious wards for soldiers, two smaller ones for officers and one for the servants in the royal palace. The bedsteads are of iron; the mattresses, straw and hair. A board at the head of each bed contains the statistics in relation to the patient, under the following heads; 1. The regiment to which he belongs; 2. The place at which he is stationed; 3. His name; 4. Native country; 5. Religion, 6. Age; 7. Disease; 8. Regimen.

The officers and soldiers of the national troops receive the benefit of this

gratuitously. Citizens are admitted upon a charge of two drachmas, or about thirty three cents, per day. Hence the hospital is not exclusively military. The kitchen and the pharmacy, the latter of which contains an ample assortment of medicines, are disconnected from the principal edifice and situated in its rear. A room adjacent to the pharmacy is devoted to dissections and autopsic investigation. An anatomical and pathological museum has been commenced, and, considering the brief period which has elapsed since the Hospital went into operation, the collection is extensive. Among the instruments belonging to the institution there is one intended as a substitute for the chain saw. Indeed, it is that instrument combined with and operated by a complication of machinery. It is ingenious in design and is a beautiful specimen of the mechanic art, but in most cases the simple saw would be preferable in practice. The instrument was invented by Heyné a surgeon of Germany.

I formed while in Athens a valuable acquaintance in Dr. Roëzer, the physician to the king. He is a Bavarian by birth, but was educated in the German and French Institutions. Although quite a young man he speaks the German, English, French, Italian and Greek languages with fluency, and his professional acquirements are very extensive.

He invited me to spend every morning with him until the hour at which he commenced his visit to patients in the city. Accordingly I called several times. Immediately upon my arrival, each morning, the servant, according to the custom of the East, brought in coffee, pipes, and tobacco. The pipes were of Turkish make, having mouth-pieces of amber, and wooden stems several feet in length. The Doctor holds a consultation at his office during an hour, every day, at which he sees a large number of patients.

Diseases of the portal circle, congestions, inflammations, and organic lesions of the liver are very prevalent at Athens. Diarrhœa, at all times frequent, sometimes assumes an epidemic character, rages with severity, and occasionally with extensive fatality. A short time previously to my being at Athens, an epidemic of this kind had carried off a large number; it was particularly fatal among children. Dr. Roëzer remarked that he found it to be most successfully treated with preparations of mercury. If that were the case, may we not conclude, especially when we take into consideration the tendency to hepatic disorders, that the diarrhœa originates in an anormal condition of the bile in respect to either quantity or quality.

There are no civil hospitals of any importance among the Turks at Constantinople. Connected with some of the mosques, there are buildings which answer the purpose of hospitals for the poor. They are resorted to but little, and only by those who do not possess the pecuniary means wherewith to support themselves in sickness. They are here treated gratuitously. The Asylum for the Insane, connected with the mosque of Suliman, which we have described in an article in a former Number of this Journal, may be taken as a fair specimen of these receptacles of the needy sick.

The hospitals of the Greeks and Armenians, at Constantinople, are superior to those of the Turks, but will suffer greatly in comparison with those of Western Europe, or of the United States. I visited one of those belonging to the Greeks, accompanying Dr. Pignatelli, the physician of the hospital, to whom I carried a letter of introduction from Dr. Roëzer.

This hospital is in Galeta, adjoining Pera, both of which are generally considered as a portion of the city of Constantinople. The location of the building is low, being nearly on a level with the waters of the Bosphorus. It is closely surrounded, on all sides, by other buildings, so as to render the situation still more unwholesome. It is two stories in height, and surrounds a court. According to custom, the doctor was accompanied, in his visit, by the resident apothecary, two servants, and two priests. One of the servants went before, carrying a dish of coals, upon which sage was kept burning for the purpose of destroying, or of qualifying, the unpleasant odour of the wards. The rooms are comparatively small, containing but four or five beds each. They are also very insufficiently lighted and ventilated, and are not remarkable for cleanliness. The accommodations are sufficient for more than a hundred patients, but there were but about fifty at the time to which we refer. Among these there were three or four cases of phthisis, two or three of ascites accompanied by anasarca, one of pneumonia, and one of arthritis. Nearly all the rest were cases of gastritis and gastro-enteritis, diseases which are remarkably prevalent, more so among the Greeks than the Turks, owing to greater irregularities of diet and abuses of the digestive organs, by intemperance in both eating and drinking. It prevails, however, to a considerable extent among the Turks after the commencement of the Bairam. That great annual feast is preceded by the Ramazan, the period of fasting, or lent, required by the Mahometan faith. The change from fasting to feasting is followed, as might be expected, by many cases of imprudence, and these frequently terminate in an inflammation of the mucous membrane of the alimentary canal. Most of the cases which fell under my notice were accompanied by intense pain upon pressure in the precordial and the right hypochondriac region, and, in some instances, in the lower regions of the abdomen. The treatment of these cases by Dr. Pignatelli consists chiefly in venesection, repeated for several successive days, to the amount of ten or twelve ounces at a time; leeches to the præcordia, or to the lower abdominal regions; and an infusion of the *prunus laurocerasus* taken internally.

In the corner of one of the most obscure rooms we approached a bed, upon which lay, in the last degree of emaciation, an aged man suffering under phthisis pulmonalis. Dr. Pignatelli was reading the remarks of the previous day upon the case, and, before he looked up, one of the priests told him that the man was dead. The Doctor, without examining for himself, remarked, "*E morto questa notte*"—he died last night—and proceeded to the adjoining room. I saw the patient wink several times, and thought he executed the function remarkably well for one who was declared, by his physician, not to be living.

Nearly nine years since, a medical school was established in Constantinople. It had but two professors, each of whom, however, was assisted by an adjunct. The institution flourished during several years, when reports of the inadequacy of the professors to fulfil the duties of their stations, and of their inattention to those duties, came to the ears of those in power. The professors were removed, and others substituted in their places, but the school has since continued to languish. Two or three years since the Sultan Mahmoud adopted a plan for a university, in which there was to be a department for instruction in the medical sciences. The extensive and commodious buildings intended for this university, were nearly completed at the commencement of the last year, 1839. I went

from Trieste to Athens, in company with two Austrian physicians who were on their way to Constantinople, one to act as chief medical adviser to the Sultan, the other to superintend the medical department of the university. If the plan of this institution be carried out as well as it has been commenced, it will contribute greatly to the increase of accurate science in the dominions of the Sultan.

Dr. Cathiodori, a Greek physician resident in Pera, was one of the original professors in the medical school. He still occupies the place of physician to the Seraglio, and has amassed great wealth by his practice.*

He possesses, in a remarkable degree, the vivacity, shrewdness, and quickness of perception which characterize his countrymen. I spent an evening with him in company with a Hungarian physician, and Dr. Bernard, the Austrian, who was about to take charge of the medical department of the university. As we all boarded at the same house we took lanterns, which the law requires every one to carry in the evening, and went together. We found the doctor in his study, wrapped in a *robe de chambre*, and reclining upon a splendid divan that occupied the whole of one side of the room. A large plated *manghale*, in shape like an elliptical tureen, or urn, stood in the middle of the room, to which it gave a proper temperature by the coals and ashes which it contained. Immediately after we arrived a servant brought in pipes, and filled and lighted them for the guests and the host. Having finished the first pipe, the servant brought in tea, with no other refreshments. Each drank a cup, the servant replenished our pipes, and thus we continued smoking, and drinking tea, alternately, during the larger part of the evening. I mention these facts to show the custom of the place. Whoever goes to Turkey, must expect to smoke while there, whatever may have been his previous custom, if he intend to pass currently, and on sociable terms, in the society of the natives with whom he may associate.

Dr. Cathiodori related in the course of the evening, the history of several operations which he had performed. One of them was in a case of congenital hypertrophy of the tongue, greatly increased during infancy and childhood. The tongue had become enormous, so as to project far out of the mouth, and entirely prevent articulation and mastication. It was cut off, just within the teeth, by an incision corresponding with the internal surface of the inferior maxillary bone and its alveolæ. The wound healed readily, the tongue assumed its natural form, and the patient could speak perfectly well. Another was in the case of a man of exalted rank, who had a tumour of a scirrhus character, situated under the ear and partially superposed upon the lower jaw, at its angle. This tumour was at first nearly or quite immoveable. No one dared to operate on the case, lest if the patient should not recover, it would become necessary to flee from the country. The tumour at length became movable, Dr. C. extirpated it and the patient recovered. A copious discharge of saliva during the operation, convinced the doctor that a lobule, at least of the parotid, was involved in the diseased structure.

No use is made of the stethoscope either in Greece or Turkey, and,

* Formerly there were seven physicians to the Seraglio, or imperial palace. They were on duty successively, each one day in the week. Thus a physician was in constant attendance upon the Sultan. Dr. Neiner, the Austrian physician before mentioned, resides in the Seraglio, and as the former system is continued, there are now two physicians in constant attendance.

according to the testimony of the Hungarian physician, it is but very little employed in his native country. Dr. Millengen, an Englishman, has resided in Constantinople, or rather in Pera, nineteen years. He says that the Turks are much more equable in their mode of living than the Greeks, and hence, as has been previously remarked, less liable to attacks of gastro-enteritis. This physician was formerly a contagionist in regard to that awful scourge of eastern nations, the plague. But, from long observation in the country so frequently doomed to its ravages, he has changed his opinion, believes it not to be contagious, and adduces many and forcible arguments in support of that belief. A woman arrived at Constantinople, from Trebizond, and made quarantine. She then went to her home, was seized with the plague and died. Of twenty-one persons who were in contact with her during her illness, not one took the disease. There are numerous instances in which one individual in a family has died of the plague, and none of the others although exposed, have taken it. Cases also are known where persons have slept in the beds of plague patients without contracting the malady. The mother is sometimes carried off and the child at her breast is left unharmed, while on the contrary, the child has frequently died and the mother been left untouched by the disease. Dr. Millengen considers the system of quarantine rather as an instrument for political purposes than as a means necessary to prevent the dissemination of epidemic diseases, and thinks, with the distinguished Dr. Bowring, who has delivered an address upon the subject before the British association, that the system ought to be greatly modified if not absolutely and entirely abolished.

Charles Brown, an American gentleman resident at Constantinople, believing the plague to be contagious, has obtained a substance, the basis which I presume is chlorine, that he considers as a positive preventive of the disease. While the plague was making the most fearful ravages in Smyrna and Constantinople in the summer of 1837, this gentleman requested permission to spend some time in the plague hospital for the Franks in the latter city, for the purpose of testing, personally, the virtues of his prophylactic agent. This request being granted, he remained eleven days and nights in the hospital, slept in a room from which patients had just been removed and assisted, every day, in dressing the sores of the sick and in extending to the patients the other kind offices of a nurse. He made constant use of the remedy which we have mentioned, and came out unharmed.

A traffic in leeches is carried on between the ports of Turkey and Marseilles. They are purchased in the cities first mentioned at about one dollar the *oke*, a Turkish weight equal to about two and a half pounds. There are from 600 to 700 leeches to the *oke*.

The following is a translation of a circular addressed by the Ottoman Protomedicus to the physicians and foreign apothecaries at Constantinople, and bearing date, November 20th, 1838.

"Agreeably to the supreme order which scrupulously forbids both physicians and pharmacutists to administer any medicines to women whereby to effect abortion, we, Protomedicus of the state, hereby caution both the former and the latter against being voluntarily concerned, either by giving medicine or otherwise, in a crime of such enormity, under penalty of punishment proportionate to the offence. We exhort them to be diligent in rendering assistance to those women in whom menstruation has ceased

from some pathological cause, so that they may not be guilty, through inadvertence, of the crime above mentioned. Furthermore, we command all pharmacutists not to sell, to any person whatever, upon mere verbal demand, any cathartic or emmenagogue medicine, lest they be regarded as accomplices in crime and as transgressors of the law which is now in force. And to contravene all excuses, either false or true which might be made on the part of an apothecary, we hereby oblige every physician who may wish to administer such medicines in cases where they are indicated, to date and subscribe the receipt with his own hand, declaring in it that the patient for whom it is intended is not pregnant. This recipe shall be carefully preserved by the apothecary, for his exemption from guilt, in case of fatal consequences. Those recipes which are not made agreeably to the above directions, or which are written by physicians who are unknown, will not be recognised.

"No means will be left untried by this local government to detect such as infringe the present law, a copy of which will be forwarded to all foreign physicians who are here exercising their profession, and to all the principal pharmacutists. These shall communicate it to others of their calling, as well as to the physicians and principal pharmacutists of the four nations who are under our protection, to the end that it shall be vigorously executed.

"In pursuance of the above, we address ourselves particularly to the principal pharmacutists, reviving what we have said to them, verbally, that they shall rigorously execute this order and cause it to be translated into their respective languages, so that none may remain in ignorance of its requisitions."

(Signed)

AHMET EFFENDI, *Protomedicus*."

ART. XIII.—*Address to the Medical Graduates of the University of Pennsylvania, Delivered April 3, 1840.* By SAMUEL JACKSON, M. D., Professor of the Institutes of Medicine in the University.*

HISTORY, with its eras and epochs, its revolutions, changes and struggles, is the record of the events to which the opinions, the interests, and the actions of men have given birth. It is the interior of man's life, revealed in things that belong to time and this world.

The life of every individual, is a history, not less solemn and important. Though apparently and viewed outwardly, trivial, and often insignificant, it is eventful of most deep consequences. It involves the eternal destiny of an immortal soul. It is the interior life of man, passing through the metamorphic changes of time, to come forth in a persistent form, in the endlessness of eternity.

The present is an epoch in the history of your lives. You have just passed one stage: you are about to commence another. You have been engaged in the great duty of forming the character, of acquiring the know-

* This address has been requested for publication by the Graduates. Its merits seem to us to justify our departure from the rule we have adopted of restricting our pages to articles of a more directly practical character.

ledge, and of obtaining the requisites necessary to fit you for a profession, regarded as one of the most respected and useful in society. It involves, moreover, serious responsibilities in its exercise.

The present is, then, a period for thoughtful reflection. The past, you are no longer masters of. It is beyond your control, and stands as evidence in favour of, or against you, according to the tenor of your conduct. Turn it now to future benefit. Reflect well on it: scrutinising it closely, and with manly firmness, look into what may have been your deficiencies, scan your errors, call forth and castigate your misdeeds. The unwhipped faults of youth, become the misdemeanors and crimes of mature life. But while you impartially weigh wherein you have been defective, you can contemplate with self approving satisfaction, those actions, and the conduct meriting applause, deserving your own, and earning the approbation of others.

The present occasion is an honourable testimony in favour of your application, your diligent pursuit of your studies, of your proficiency in your professional knowledge, and general moral worth. Without satisfactory evidence on these points, the honours of this University are not conferred.

The class attending the courses of the University, the session just closed, was larger, with one or two exceptions than in any preceding year. It was not less distinguished for its orderly demeanor, its respectful attention to the lectures, and its general ardor in pursuit of knowledge.

The candidates for the doctorate have been unusually numerous. They have been subjected to a more rigid and sifting examination, than has been usual. This ordeal you have stood, and have acquitted yourselves to the satisfaction of the Professorial Board. You have had conferred on you the diploma of this University, the highest evidence of acquirement in the science of medicine known in this country.

Though the past may present to you, as it will to all who subject themselves to a proper scrutiny, much to correct and reform, yet will you find in it that of which you may be proud. Cherish and persist in the good; repress and amend the bad. This mingling of good with ill, is the common quality of man's character.

"Our virtues would be proud, if our faults whipped them not."

The future is before you. How much lies buried, impenetrable to eye or thought, in that future! Flushed with recent success, anticipated hopes brighten the eye, and gleam upon the brow. To what extent these will be realized, how little of what is promised will come to pass; how much unforeseen events and changes will blight and destroy, no prophetic eye can discern. This unknown future, it is your duty to prepare for. It flows on a vast flood of events, which cannot be stayed or turned aside. But, if we cannot master and control the events of time, we may possess ourselves of the qualifications adapting us to take advantage of them, as they arise. We can so conduct ourselves as to convert them into benefits, and to render them promotive of happiness, if not prosperity to ourselves or others.

"The fault, dear Brutus, is not in our stars,
But in ourselves, that we are underlings."

Human power cannot command and govern the exterior circumstances of the world, and bend them exclusively to man's purposes. They are directed by a divine and superior agency, to accomplish ends intended from eternity. Men are the instruments made use of for their accomplishment. They are endowed with the qualities fitting them for that object.

If we can not change the fixed order of exterior events and circumstances, it is in our power to regulate and control ourselves, to form our principles and characters, to constitute and govern the interior circumstances of our nature. In this manner, man can adapt himself to the events that overtake and involve him. He proceeds with them, may appear to give them direction and control, for he works with them, and reaps fortune and fame: or should he fall a victim to their overwhelming power when placed in opposition to them, he bows in submission and resignation to the irresistible destiny of a divine law.

The highest ambition of any individual as it respects this world, should be, to qualify himself, by a just understanding and preparation of the powers he possesses, for accomplishing some one of the infinity of ends, that can be perfected in the great movement of our social scheme, by any one generation of men. No one individual, it is probable, more than another, is selected by Divine Providence for a given end. He has provided, in the immense variety of mental, moral and physical qualifications, for the combinations necessary to form the character adapted to any especial purpose. It is always existing. The occasion and the opportunity for the calling of it into action, are alone required, when it appears on the stage, in its place and time.

The success of one individual more than another, in any particular department of science, or line of pursuit, depends on his being always ready to seize on the opportunity and occasion, as they may offer, by which he can be introduced on the field of action, and his powers be brought into play.

"There is a tide in the affairs of men,
Which, taken at the flood, leads on to fortune."

The difficulty that besets most men, is, either that the opportunity does not present itself when they are prepared: or, when it arrives, they have neglected the preparation that is required. Opportunity once lost, is lost forever. It seldom comes a second time.

The beautiful apologue of the ten virgins, is not less applicable in a worldly, than in a religious meaning.

Be like unto the wise virgins, have your lamps trimmed and your oil ready, that when the bridegroom (opportunity) cometh, you may enter in and reap the enjoyment of your foresight and precaution. But if, like the foolish virgins, you neglect your lamps, have no provision of oil, and when the bridegroom cometh, you have then to look after your neglected means, the door will be shut, and you will in vain seek for admission. Neglect and oblivion will be your portion.

From this moment let it be a fixed determination of your minds, to devote yourselves to the fullest preparation, for the exercise of the social and professional duties that will devolve on you. A mission of more or less importance to be fulfilled in this world, is placed within the reach of

every individual. It is a responsible obligation of man to his God; of the creature to the Creator, that he wilfully neglect not to execute that mission to the extent of his abilities.

You have received from your instructors, in their separate valedictories, at the close of their courses, advice appropriate to each department. You are now about to separate from the Alma Mater, under whose fostering care you have been raised to your present position; and under whose auspices you enter on the world.

In her name, I am deputed, though it would come with more grace, and be more appropriately performed, by a higher functionary, to bid you farewell; and to address to you some observations and admonitions, that may direct your attention, more specifically, to the duties and obligations you will be called on to perform and observe in your line of conduct.

These duties may be classed under those that are professional, and those that are social.

The first, or your professional obligations, are of different kinds. They may be placed under the following heads: and it is to them I shall confine my observations.

1. The obligations of forming your professional character, and of completing your professional acquirements.

2. The obligation of contributing to the advancing or perfecting of Medical Science.

3. The duties you will owe to your professional brethren.

And, lastly, the duties you will be called on to fulfil to your patients.

A few very cursory remarks will be submitted to you on the above order of duties.

1. The formation of a professional character of an elevated order, is essential to distinguished success as a practitioner of medicine. The foundation of this character must be laid in the cultivation of a strong love of truth, of justice, and of benevolence, sustained by a profound conviction of the great truths of religion.

A character into which enter these elements, must always command respect and confidence: without them, no one can ever be truly great.

But to these important moral qualifications must be combined, zeal and assiduity in the gaining of knowledge, of practical tact, and of experience in your profession.

You have received, as the reward of your past exertions, the diploma admitting you to the doctorate. You are now to make yourselves Physicians. Do not fall into a common error in supposing that, with the school ends your education; that you have terminated your studies. They in fact now take a higher order, and a new direction. Your labours will increase, not diminish.

Courses of lectures are not intended to complete, nor can they complete a medical education. You have been grounded in the elementary principles and knowledge of your profession, as it exists at the present time. You have now to make yourselves acquainted with the science, as it has been.

The works of the illustrious dead of past ages; those who have left behind them a living and enduring memory, as observers of nature, should be perused by you. Original writers of this character are few. One or two authors in each era of the science, may constitute the extent of useful research in this respect. The great mass of writers have done little more

than repeat and comment on the opinions and doctrines of the original few who preceded them.

It is more important that you should obtain, as early as possible, practical knowledge by immediate observation. Neglect no means for this purpose. Frequent hospitals, follow the attendance of dispensaries, bestow your services on the poor, so many of whom require and gladly avail themselves of medical assistance. The principal object you should aim at, is to acquire a knowledge of disease. The symptoms alone should not engage your attention. They are the signs by which a disease is manifested: they are not the disease. What is of still more consequence, is, that you study, by close attention, the natural history of diseases, the extent of the natural powers of the economy in their cure, and the methods that nature adopts, in the play of the reactive forces and operations of the system, to disembarass it of disease. This information is the most certain basis of a safe, sound and judicious treatment. It is to be acquired by the bed-side, where you must watch the progress of a case, as it traverses its different stages, and note, in writing, as they occur, the phenomena you witness.

Most young practitioners mistake the proper object of their clinical studies and observations. They believe the first and great object to be attained, is the prescribing of physic. This is a vulgar notion, cherished by the general ignorance of society as to the true nature of medical science, and the proper character of a physician. It is difficult to resist the importunities of patients and friends of the sick, who expect from the administration of drugs some miraculous influences: it is difficult to divest ourselves of the belief, so flattering to self-love, that with our physic, we are omnipotent in the power of controlling the economy according to our views, and of overcoming disease.

The last and least important part of the science of medicine is, the dosing of patients with medicines. Understand me: do not suppose I undervalue the immense services derived from the judicious administration of medicines in the treatment of disease. Medicines produce in the animal economy operations, such as nature is observed to excite, as the means of restoration. These processes of nature, the physician imitates; he excites them, artificially, with his medicines, or other remedies. When they are done happily, at the appropriate time, and in accordance with the natural law of the disease, they prove most beneficial, and are curative in their operation. But when the medicinal operation and disturbance are inopportunately provoked, when they come in conflict with the natural law of the disease tending to its solution, confusion and new disorder in the functions and organs are the consequences. The result will be to retard the recovery of the patient, to produce chronic disorders of long suffering, or destroy the power of recovery. *Vel educes quæ educenda non sunt; vel augebis morbum; vel jugulabis ægrotum.*

Most physicians learn, from experience, that often their highest art consists in amusing the patient, inspiring confidence, and thereby quieting the system, that would otherwise be disturbed from nervous agitation, by some imaginary remedies, while nature is permitted undisturbed to accomplish the cure.

The laws of nature are God's ordinances in the natural world. Man can do nothing without them or against them. It is the first and great object of every scientific practitioner of medicine, to study them and to

master them, as they are displayed in the life-mechanism of living beings. Of these laws, it is his pride and boast, that he is the minister and interpreter. He is the servant of God, ministering to and alleviating the temporal and physical wants and infirmities of suffering humanity in the mode of his appointing; just as the ministers of our holy religion are God's servants, ministering to and watching over the spiritual failings and the endangered condition of man's soul, according to his revealed will. Medicine is a mission and a ministry, inferior only to that of religion.

II. It is not less an obligation, that you should exert your powers in contributing to advance and improve the science of medicine, than it is to perfect your own knowledge. Medicine regarded as an art, or a science, all are ready to acknowledge, is imperfect. That it can be advanced to a much higher degree of completeness, cannot be doubted by any who are familiar with what medicine has been, what has been done within a few years, and what is doing in the science.

The advancement of medicine, consists in the greater accuracy and extension of its facts; with an adherence to a more rigid method of logic and reasoning. It is assuming daily more of the character of a physical and positive, and losing that of a speculative and metaphysical science.

General theories are but little in vogue. The versatility that prevails in diseases, forbids the expectation, that any one doctrine ever can embrace conditions, so endless, diversified and fluctuating.

Causes of a general nature, inappreciable except by the phenomena they produce, acting in periodical cycles of varying duration, exert profound modifying influences of different nature, on organised beings, more especially on the vital energies and organisation of the human race. From these, result not only the great epidemics, dissimilar at each period, that prevail over whole zones of the globe, but the especial periodical constitutions that impart a common character to nearly all the diseases occurring within that cycle. A doctrine founded on the facts, as they then are observed; and a system of treatment, adapted to a particular constitution, or to a particular epidemic, may be arranged. They will be true for the time: but must fall, as that constitution, or epidemic influence passes away, and a new revolution has brought forward a new train of morbid conditions and phenomena.

In these circumstances are found the explanation of the diversified theories and modes of practice, that have prevailed at different times in medicine. This has been urged as a reproach on the science and our profession. It is the consequence of things as ordained by the Creator. A theory and practice are true and applicable only for a time. A general and persistent theory is an absurdity in medicine—medical theories must be numerous and variable, for the facts, of which a theory is the aggregate exponent, are themselves, for the most part, complex, variable and transitive.

You must not, then, wed yourselves to any theory, nor permit yourselves to be enlisted as partizans to any doctrine or practice. Use your theories as a lame man does his crutches; but be ready to throw them aside, as soon as they are useless.

The advance of medicine consists in the establishment and verification of facts. But what an endless labour is here opened to the profession. It extends over the whole field of organised beings, vegetable and animal, from the highest to the lowest in the scale, in their natural and diseased,

or unnatural conditions. In all these are presented the phenomena of life and organisation; the products of life and organisation; and the agents that influence the vital and organic phenomena in all their states. These bear with more or less force on medicine, as a science, in illustrating the complicated, obscure, and, without this collateral aid, incomprehensible phenomena of the human economy, the more especial object of medical investigation.

It is to facts that alone can illustrate medical science, that you should devote your time and attention. Whatever may be the particular bent of your genius, or the kind of talent you possess, there is, in medical researches, some one pursuit adapted to it. You can have no excuse for negligence. The qualifications for these objects, are industry, perseverance, application. These are in the power of each of you. They alone may enable you to establish important truths to be embodied in the science. Facts admitted into science, may be regarded as medallions struck to commemorate an event, or to perpetuate a renown. They carry to remotest time the name of their discoverers.

The labour given by most men to the acquisition of wealth applied to scientific objects, would confer on you a celebrity—would make your labours useful to future generations, as to the present. To a generous mind these are far more exciting motives, than the more sordid feelings of avarice.

It is unhappily true, that the active commercial spirit prevailing in this country and England, gives to the possessor of wealth, an undue power and influence. It represses an intellectual class; it places the moneyed interest at the head of society. A scientific and literary class, possessing a weight and power in society, is yet to be formed in this country. Our literature and science are cultivated in subserviency to the advancement of fortune. We work for money; not for truth or fame. Combat against this feeling. To the rising generation entering into the learned professions, and to the press, must our Republic look for safety against the threatened overthrow of its constitutions, from the corrupting influence of wealth on our manners. The indignant outcry of the Roman satirist, against the venality of the Roman people, in the last days of the Republic, would appear as though extorted by a contemplation of our present state.

"The first great wish that all with rapture own;
The general cry to every temple known
Is gold, gold, gold—and let, all gracious powers,
The largest chest the Forum boasts be ours."

The direction that medical investigation has taken is the analysis of organic phenomena, and their reduction to the simplest possible elements. It is the second stage through which science must advance to reach its completed state. In the first period, phenomena can be known only as a unity. The reasoning founded on them is consequently erroneous. In process of time it is recognised, that the phenomena, regarded as simple, are complex. Analysis is then attempted: this is the character of medical science at the present day. It is analytical. In the last period of a science, that in which it has reached its ultimate development, the phenomena, reduced into their separate elements, are reconstructed again into unity. But they are known as unity embracing diversity. Comprehended

in all their relations, they can then be constituted into the natural order and arrangement, in which consists a just theory.

Organic phenomena, from their extraordinary complication, could not be approached by analytic processes, until the collateral sciences had reached a sufficient degree of perfection to furnish the means. This period has arrived. Organic phenomena are attacked by every method of analysis. This is exemplified in the history of organic structure. General anatomy, or the reduction of the organs to tissues, commenced in our time, is now completed. The tissues themselves, are now undergoing a further reduction to simpler elements and forms. The microscope, brought to so much perfection, as to be free, to a great extent, from the defects that rendered it at times delusive, is an important means by which this is accomplished. The result is the creation of microscopic anatomy. Two great works are now issuing from the press devoted to this subject. The one, the splendid publication of Professor Berres of Vienna, "*Anatomia Partium Microscopicarum Corporis Humani*:" the other, a more complete and equally splendid work by Professor Mandl, of Strasburgh, "*Anatomie Microscopique*."

Besides the above large and general works, numerous contributions have been made by other distinguished observers, on the microscopical structure and composition of the tissues and fluids. Professor Henlé of Berlin, has made a most elaborate demonstration of the organization, the physiology and pathology of the mucous tissues. Erdmann, Valentine, Burdach, Wagner, and others have furnished new and important facts on the elementary organization of the nerves and muscular tissues.

Time will not admit of the many examples that could be adduced of the new facts and new views, arising out of them, in anatomy, physiology and pathology, derived from microscopical researches in those departments.

Organic chemistry is not less rich in its contributions to anatomy, physiology, and pathology, and will soon throw a brilliant light on the darkest spots of our science.

It will not be accounted rashness, by those who have looked into this subject, when I assert, that under the searching analytical review of the facts of medicine, and application of analytical philosophy to medical science, a large portion of what has been received, and is regarded as established, will be changed, or swept away. Doctrines and opinions founded on those facts, now holding sway, must disappear. They will take their place in the history of the science: they will not belong, as now, to the science.

But what are we doing in this stirring and busy time, contributing our aid to the improvement of our science? I fear, it must be said, almost nothing: who amongst us is at work in these new fields of scientific research, seeking imperishable fame? I fear, it must be said, no one.

Three years have this day elapsed, since a young student, full of zeal and ambitious ardor in the pursuit of knowledge, stood on this stage, and received, as you have, the honored diploma of this school. He presented to the faculty as a thesis, an elaborate essay, in which he confirmed Müller's discovery of lymphatic hearts or pulsatory lymph organs, in the Batrachia, and extended it by proving their existence in other animals. He did not abandon the course he had commenced so well. He continued cultivating comparative physiology and microscopical investigations, though

his means were but moderate. He published as a part of his labors, about two years since, an interesting series of observations on the venous circulation.* He was engaged earnestly in pursuing these objects, and but a short time since, I could have answered the question by adducing Dr. Allison as one, who promised to illustrate by his talents and industry, this department of American science. But alas, his career is ended. A few days since, and his body was consigned to the tomb. Frail in constitution and delicate in form, he fell a victim to his exertions. A wound, received in dissecting an animal, on which he was making observations, was remotely, as I have been informed, the cause of his death.

The war-trump, and the muffled drum, and the measured tread of armed men, and the musket shot pealing over the grave, honor the death of the soldier, the slaughterer of his brother man. But the student who meets his death battling for truth in the great arena of science, passes to an unknown grave, followed by the regrets and the tears of the few who knew his worth. Yet there is another judgment, and another reward than that of man. A brighter glory will arise from the obscure grave of the unknown student, than ever yet surrounded the blood-stained monument of the warrior of an hundred fields.

You must necessarily, gentlemen, before you become deeply engaged in the absorbing occupations of the practice of your profession, pass some years with much unoccupied time. Apply this to the pursuits to which I have directed your attention. The field is almost a virgin soil. You can scarcely fail to earn a brilliant reputation, and lay the foundation for a successful professional career.

III. Permit me to point out a few prominent duties, that will devolve on you in your intercourse with your professional brethren. Much of your future comfort, and no small part of your success in your profession, will depend on the relations you maintain with them.

It is impossible to avoid collision of interests or opinions, with those occupied in the same pursuits as ourselves. Society itself, is maintained in vigorous existence, by the moral actions and reactions of men on each other, acting in masses or individually. The conflicts thence arising excite our energies into activity. If governed by elevated moral principles; if a sense of truth, of justice, of honesty of intent and action, preside over our conduct, no hostile feelings are engendered by them.

In the medical profession, the sources of differences in opinion and collisions of interest, are more numerous, probably, than in any other.

It is not possible that all individuals can view the very diversified and incessantly varying phenomena, presented to medical observers, in the same light.

It is equally true, that modes of treatment the most opposed to each other, can be made to produce the same results. There may be a choice as to one or to the other, but statistical tables have not yet been formed, that would demonstrate in figures, which is to be preferred.

Tolerance of differences of opinion, as regards doctrine or practice, is an absolute duty imposed on every conscientious mind. Where there is difference, our duty is to examine, not to condemn and reject.

No one has a right to presume, that his opinions are the standard to which all others are to conform. This assumption and intolerance arising

* See this Journal for August, 1838.

from a false pride of opinion, have been frequent causes of idle controversies, productive of embittered feelings, without deciding a single question agitated. Eschew on all occasions controversies. Truth is never elicited by them. Be always ready and willing to enter into investigation.

The more frequent cause of professional difficulties, arises out of the *business* of a physician. His interests are here involved, and these touch us more nearly, than the questioning of our opinions.

Few occasions of this kind would exist, could man understand his true interest, in respecting the rights and interest of others, while prosecuting his own. Too often the immediate and momentary gain, occupies the whole mental vision; the reactions of violated rights, of wounded interests, are overlooked. By an act of injustice, an enemy is made, and the confidence of others impaired. Suspicions of unfair dealing, of trickery, of unrestrained selfishness, overshadow the character, and, from precaution or self-defence, your standing is depreciated, or the courtesies of the profession refused.

I cannot, at this time, enter into the detail of the conduct you should observe, in the relations that bind you to your brethren. Every man of good sense, possessed of honourable sentiments, and a moral feeling of right and wrong, by the instinct of honesty, will know how to conduct himself, without a code to regulate his deeds.

It may be permitted me, however, to speak on a few points more circumstantially for your guidance.

A physician, in attendance on a patient, has a right to expect from the common courtesy that should govern a gentleman, that no other would interfere in visiting and in advising a patient, or in giving an opinion on the case; or seek, by any underhand proceedings, to weaken the confidence reposed in him.

Called to a consultation, if you find, on investigation, that your colleague has fully understood the nature of the case, and has pursued a judicial treatment, sustain him in the course he has adopted. Suggest no change that is not indispensable. It might be construed into a disposition to show that you could amend, in some respects, what had been done. This course is more especially to be observed towards a younger member of the profession whose reputation is not yet established.

Whatever passes in a consultation is not to be the subject of conversation to others. If consultations are to prove really useful, there must exist the most perfect confidence between the parties, leading to a full and free communication of opinions, views, and experience. But this cannot be expected, where it is known, that what occurs may be promulgated, and made the subject of comment and indiscriminate conversation.

Do not suffer yourselves to give opinions respecting the judgment or practice of others, in any particular case, on the *ex parte* statement of patients or their friends. Never implicate a fellow-practitioner on such statements. They are inaccurate or false, and your opinion will certainly be incorrect and unjust.

Physicians are often treated with great injustice, from capriciousness, or other unworthy motives, by those whom they have attended. Discourage this conduct, and sustain, as far as lies in your power, the feelings, the character, and reputation of your compeers.

We cannot prevent individuals from exercising their freedom of choice in selecting their medical attendants. But we can, in all cases, take care

that those who have preceded us have been treated courteously in their dismissal; that their feelings have not been outraged, and that their interest is secured.

By the observance of the above rules, and the general principles pointed out, a reputation for fair and honest dealing will be formed, that must command respect and confidence.

Personal differences and degrading disputes will be avoided, and the profession, by the harmony and combination of its members, will exert a powerful and a salutary influence on the moral condition of society.

IV. The last order of duties to which I shall direct your attention, are those that relate to your patients.

You are selected by them from confidence reposed in your knowledge, judgment and skill. Take heed that you justify that confidence. Omit no means, spare no pains to understand the case you have in hand. Investigate it closely; examine into the state of every organ and function of the body. Before you undertake to treat it with remedies, satisfy yourselves as to the seat and nature of the affection, and determine what is to be done, and what is not to be done.

In chronic cases, review the whole life of your patient. Let nothing escape your research. The diseases of a former time, early or later habits, the state of mind, the business, occupations, modes of living, every thing that could have exerted a permanent influence, are to be brought into review.

In acute cases attended with danger, be assiduous, even to overwatching, in your attentions. In doubtful periods, make your visits, for your own satisfaction, more frequently than may be actually necessary. But do not, in that case, burthen your patients with charges for them. When life is in great danger, and depending on your skill, remain with your patient until the event is decided.

The intercourse of a physician with his patient, must be of the most confidential nature. There are occasions when it is necessary that the mind should unburthen its inmost thoughts, and the heart pour forth its hidden secrets. That which is of deeper interest than life itself, must be confided to the physician. But for this the most implicit reliance must be placed in his secrecy, his integrity and honour.

Make it a rule to speak of your patients, their affairs, their families, their diseases, with the greatest reserve. In referring, as may be sometimes necessary, to their cases, do not mention names. The patient must feel assured that the physician is a depository, in whose bosom every trust is sacredly preserved.

One of the most delicate offices the physician is called on to perform, is the communication of a fatal termination to a disease. The inevitable result is known to him, in many cases, long before it is suspected by the patient or his friends. Your opinion will be looked to with anxious solicitude. Never deliberately deceive. According to the circumstances, be more or less explicit in giving your judgment to the friends and to the patient. You cannot always be frank and open, expressing in the clearest manner your convictions on these occasions. When you find it necessary, prepare gradually the mind for the reception of the truth; but never buoy up with false hopes you know must be disappointed.

To many persons, from a happy temperament, or a more happy preparation of the mind, sustained by elevated principles of religion, death pre-

sents no terrors. They rise above the weaknesses of common natures. To them death comes as a friendly messenger, surrounded with beautiful attributes, to announce the change from time to eternity; it is a blessed harbinger, summoning to a brighter and holier existence, in the eternal communion of the virtuous and the just, with the Creator. With such you need have no concealment.

There are others, again, whom the thought of death overcomes with dread, and sinks in despair. A premature communication would prove disastrous. Provident nature has not been neglectful in this our greatest need. A period arrives in the failing of the powers of the system, when life is felt as a burthen, and the soul, yearning for its native and eternal home, longs to escape from its corporal thralldom. The most timid no longer dread it. Though but of late, the mind refused to contemplate it as a thing too fearful to be looked on, it is now welcomed with pleasure, and sought for as a relief. Wait with such, until you perceive this state approaching. Your tidings, then, will not be of sorrow, but of great joy.

Many other topics might be introduced and expatiated on. They must be left to your own judgments and discretion, which, fortified and directed by sound principles, will not fail to suggest an appropriate conduct as circumstances may require.

The connection, gentlemen, that has subsisted between you and this institution, now ceases. You pass from under its fostering protection, to wend your way in the devious paths of life, guided by the principles you have here imbibed.

The interest you have excited in us, will not cease. Success and renown in your profession, reflect honour on your instruction and your school. Failure and disgrace tarnish their reputation. Take with you our blessing: and believe us most sincere in our wishes for your happiness and prosperity. Go forth on your great mission; and, in its successful performance, reaping golden opinions from your fellow-men, may you be hailed in their grateful aspirations, "the hands of heaven."

In the name of my colleagues and myself; in the name of your Alma Mater, I bid you farewell.

REVIEWS.

ART. XIV. *Elements of Physiology.* By J. MÜLLER, M. D., Professor of Anatomy and Physiology in the University of Berlin, &c. Translated from the German, with notes. By WILLIAM BALY, M. D., &c. Parts 3, 4, pp. 258, 210. London, 1838.

OF the first two parts of Professor Müller's *Elements of Physiology* we have given, in a former Number, as complete an analysis as the nature of the work and our limits would permit, and we are persuaded that no apology will be necessary for our calling the attention of our readers, even at this late period, to the two succeeding parts, which complete the first volume.

The portion of the *Elements* now before us, embraces Books three and four of the author's general division, comprising the physiology of the nervous system, and of motion, voice and speech. These important and intricate subjects are discussed with the author's usual ability—the present state of our knowledge in regard to them is presented in a clear and satisfactory manner, and the utmost caution is taken to separate established facts and logical deductions from hasty and imperfect observations and mere hypotheses. The third book certainly comprises the very best compendium extant of the physiology of the nerves and of the central organs of the nervous system; and although, from the very nature of the subjects treated of in the fourth book, the student will find it less satisfactory, it is nevertheless as lucid and complete as the materials in the possession of the author would permit.

The consideration of the nervous system commences (section 1) with the properties of the nerves generally—After considering the principal forms of the nervous system, as displayed in the radiata, mollusca and articulata, with a brief notice of the opinions of leading physiologists in regard to the relation in which the nervous system of invertebrate animals stands to that of the vertebrata, the author proceeds to an examination of the minute structure of the nervous system. He describes *the nerves* as constituted of large and small parallel fasciculi, invested by a membranous neurilema. These fasciculi are found to be connected with each other at intervals—but the parallel primitive fibres contained in these fasciculi run in apposition with each other merely; they do not unite—Even when the fasciculi appear to anastomose, there is no union of fibres, but merely an interchange of fibres between the fasciculi. The structure of the primitive fibres was first correctly pointed out by Fontana, who distinguished in them an external tubular portion, which, when highly magnified, has a wrinkled aspect, and a solid internal portion, which forms a smooth homogeneous thread. In some fibres he was able to separate the tubular sheath from its solid contents. Remak has recently confirmed the accuracy of these observations of Fontana. He describes the contents of the nervous

cylinder to be either a perfectly solid fibre of rather less diameter than the cylinder itself, or a flattened pale fillet separable by pressure for a considerable extent here and there from the investing tube, which is prone to become wrinkled or puckered.

The tubular structure of the cerebral fibres is described by Fontana and by Ehrenberg. The latter states that these fibres, in the brain and spinal cord, run generally in straight lines, and do not anastomose. He saw them divide in but very few instances, as in the spinal cord sometimes. Professor Müller remarks, however, that—

“The division of the fibres may be more frequent even in the brain, since the mass which the diverging fibres constitute evidently increases between the medulla oblongata and their radiated expansion in the gray matter of the outer part of the optic thalamus. The nature of the contents of the delicate tubes in the brain was not hitherto quite accurately known. It appears to be rather gelatinous than solid; some indeed have found it of oily consistency. Remak states that it is, as in the fibres of nerves, a coherent thread; but, like the tube itself, of a much more delicate nature.”

From the observations of Treviranus, Valentin, and Weber, it would appear that the fibres of the brain, spinal marrow, and all nerves, are, in the perfectly fresh and uninjured state, uniformly cylindrical, without any enlargements, but that a varicose or beaded appearance may be produced in them by pressure. The tendency to assume a varicose appearance, is set down by Müller as a characteristic property of the fibres of the brain and the nerves of special sense. It is not quite certain on what this property depends.

The fact of all the nerves containing both white and gray fasciculi is now fully established. Thus the cerebro-spinal nerves contain some few gray fasciculi mingled with the white; while, in many parts of the sympathetic nerve, Remak has detected white fibres mingled with the proper gray or organic fibres. According to Remak, the two sets of fibres differ in structure; the white being not only much larger than the gray, but the difference of the tube and enclosed fibre is also in them always distinct, while the more delicate gray fibres have rather a homogeneous aspect. The surface of the gray fibres is here and there beset with very minute granules, similar to those on the twigs of the minute blood vessels, for instance, in the brain.

Between the anterior and posterior roots of the spinal nerves, neither Müller nor Ehrenberg could detect any difference of structure.

Agreeably to the observations of Whytt, Prevost and Dumas, the accuracy of which has been confirmed by Professor Müller, the primitive nervous fibres remain distinct and isolated throughout their course; the cerebral extremity of each fibre being connected with the peripheral extremity of a single nervous fibre only, and the peripheral extremity being consequently in relation with only one point of the brain or spinal marrow; so that, corresponding to the many millions of primitive fibres which are given off to peripheral parts of the body, there are the same number of peripheral points of the body represented in the brain. Consequently the notions heretofore maintained in relation to the nervous connection of different organs, and of the cause of the sympathetic relation which exists between certain parts of the body, are altogether erroneous. The frequent anastomoses observed in certain nerves is caused by a primitive fibre passing, in its course, from one nerve into another.

"By the aid of minute dissection it is easily seen that when a branch is given off, the fibres in the trunk do not divide into two, one remaining in the trunk while the other leaves it to join the branch; but that the fibres of the branch are some of those which already existed in the trunk: hence, in a nerve, very different fibres, sensitive and motor, may be associated together, and in the trunk of a nerve there may even be branches contained which do not unite with the other constituent fasciculi, and have no resemblance to them in its properties. Thus the nervus mylo-hyoideus, a motor nerve, is commonly regarded in a general way as a branch of the inferior dental, a nerve of sensation, although these two nerves have nothing in common except their position side by side; and of this there are frequent examples. We hence see that the properties of the component fasciculi have nothing to do with the nature of the trunk of the nerve itself; but that, on the contrary, the nervous trunk, particularly at some distance from the brain, may be constituted of fasciculi of very various properties, the different fasciculi destined for a particular limb having become annexed to it in its course."

"It is found that the nervous fibres terminate either by the formation of regular anastomosing loops between every two fibres; or by uniting so as to form a network like blood vessels; or, thirdly, they all terminate in an isolated manner, without being connected together. The first was observed by Prevost, Dumas, Valentin and Emmert to be the mode of termination of the nerves in the muscles; and by Breschet, Valentin and Burdach it was observed in the case of the nerves of sensation: the second, or reticular mode of termination was seen by Schwann in the mesentery of the frog and firetoad (*Rana bombina*), and in the tail of the larva of the toad: the third was discovered by Treviranus in the eye and ear, and the observation is confirmed by Gottsche."

According to Valentin, the primitive fibres of the spinal nerves do not end in the spinal cord, but continue their course as far as the brain. In the white substance of the brain, the fibres lie in contact with each other; but at the line of contact of the white and gray substances, the fibres become separated by globules of gray matter, and at length radiate out into the cortical substance; where they form loops by uniting one with another. This is seen most distinctly where the white and reddish gray substances are united together, or in the yellow substance at the periphery of the hemispheres of the cerebrum and cerebellum.

The elements of the *ganglia* of the nerves in the higher animals, and in the human subject, have been ascertained by Valentin to be globules of considerable size, with an interior nucleus, and in the circumference of this another smaller nucleus, and also spots of pigment on their surface. One or more fasciculi of fibres which enter the ganglion form within it a plexus, the fibres undergoing a different arrangement, and again issue from it; while single fibres, or fasciculi of fibres, form an interlacement around the globules of the ganglion. The fibres which form this interlacement come off from the trunk of the nerve and join it again. This description applies to the ganglionic globules generally.

"The gray substance of the brain and spinal cord is, according to Valentin, formed wholly of the same globules as the ganglia of vertebrate animals. The appearance of minute granules is produced by the disintegration of the original globules, which are very soft. The only circumstance in which the globules of the gray substance of the brain differ from those of the ganglia, is that the cellular tissue which invests the former is less firm. In the white substance of the brain there are, according to Valentin, no globules or granules; the appearance of granules in it is produced by the nervous fibres being broken up. On the quantity of the deposit of gray globules depends the degree in which certain parts of the brain differ in color from the white or fibrous substance: where the

primitive fibres are in the greatest number, the color is whitish gray; where they are less abundant, it is reddish gray: the darker colour of certain portions of the brain depends on a pigment deposited on the globules."

Rolando has discovered two kinds of gray substance in the spinal cord. What is commonly known as the gray substance of the spinal cord, contains the great ganglionic globules above described, together with numerous fibres. At the posterior part of the posterior cornua of this substance runs a line of perfectly gray matter, which contains corpuscles similar to the red particles of frog's blood. The continuation of this matter in the medulla oblongata, where it comes to the surface, has the same structure.

Certain processes are seen, under favorable circumstances, to issue here and there from the large globules of the gray substance of the brain and ganglia. The fibres of the ganglionic globules observed by Remak, have some similarity with the delicate gray filaments which he has detected in ganglionic nerves; and if, according to Müller, the latter filaments, which form the gray fasciculi of the sympathetic, are organic nerves, it becomes in some degree probable, or at least possible, that this is the origin of the gray fibres of the organic nerves.

On the distribution of the white and gray systems of fibres in the cerebro-spinal and sympathetic nerves, Professor Müller remarks as follows:

"We have already mentioned that the cerebro-spinal nerves contain some fasciculi of gray fibres, and that the sympathetic contains likewise some few fasciculi of white fibres. We have suggested as probable, that the gray fibres, which have a peculiar structure, derive their origin from the ganglionic globules which are so frequent in the ganglia of the sympathetic, but which are present, though in less number, at those parts of the cerebro-spinal nerves, where the fibres of the sympathetic enter more largely into their composition, as at the angle of the facial nerve, where it is joined by the vidian, and in the second and third branch of the nervus trigeminus. We see, therefore, that the sympathetic differs only in a relative manner from the other nerves. The mixed cerebral and spinal nerves contain chiefly fasciculi of sensitive and motor fibres, and a few fasciculi of gray fibres, which have a tendency to the formation of ganglia: the sympathetic, on the contrary, contains a few sensorial and motor elements, derived from the posterior and anterior roots of the mixed nerves, and consists chiefly of gray organic fibres, corresponding with its distribution to parts which serve principally for the production of chemical changes in the fluids of the body. Hence the frequency of ganglia in the sympathetic nerve; while in the cerebro-spinal system of nerves, if we except the regular ganglia of the posterior roots, ganglia are rare, occurring only where there is a considerable intermixture of gray fibres from the sympathetic."

Professor Müller arranges the ganglia into three classes—

1. Ganglia of the posterior roots of the spinal and cerebral nerves, the ganglion of the larger portion of the nervus trigeminus, that of the vagus, the ganglion jugulare superius of the glosso-pharyngeal nerve; and, lastly, the ganglion on the small posterior root of the hypoglossal nerve. These ganglia have the common character of belonging to nerves of sensation.

"The structure of the ganglia of this class is not essentially different from that of the ganglia of the sympathetic; but we see in them more distinctly the pencil of fibres passing through unchanged between the globules of the proper substance of the ganglion. The special function of the ganglia of the sensitive roots is not yet known. Perhaps they may give rise to the organic fibres of the sympathetic, which these ganglia would then connect with the posterior columns of the spinal marrow. The sensitive and motor white fibres of the sympathetic are connected with the posterior and anterior roots of the spinal nerves."

"The ganglia of the sympathetic itself, however, appear to be, at all events, a principal source of the organic fibres. The lateral cords of the sympathetic are proportionally much whiter than the branches of the great abdominal ganglia. The facts which we have at present considered, do not enable us to decide whether an increase in the number of fibres takes place in the ganglia of the sensitive roots, and in the Gasserian ganglion. The white fibres pass through with merely a change of arrangement—thus far is certain. But gray fibres may arise from the ganglionic globules, since it is indeed a known fact that gray fasciculi arise in the Gasserian ganglion and accompany the branches of the *nervus trigeminus*."

2. Ganglia of the sympathetic nerve. Professor Müller remarks, that if a multiplication of fibres takes place in any ganglia, it is most likely to be in those of the sympathetic, and it is at least difficult to suppose that all the primitive fibres of the abdominal plexus are contained in the roots of the sympathetic from the spinal nerves. But if this multiplication does take place, it can affect only the delicate gray organic fibres; for the ordinary primitive fibres of the nerves are known to pass unchanged through the ganglia of the sympathetic, as they do through those of the first class.

3. Ganglia of the cerebro-spinal nerves at the points where they unite with branches of the sympathetic. These are the ganglion petrosus nervi glosso-pharyngei, the intumescentia gangliiformis on the angle of the facial nerve, the ganglion sphenopalatinum on the second branch of the nervous trigeminus, the ciliary ganglion, and perhaps, also, the otic ganglion, and some others. Professor Müller supposes that the reason why the union of fibres of the sympathetic with cerebral nerves is attended, in the above instances, with the formation of a ganglion, while no ganglion is formed at any one of all the numerous points of origin of the sympathetic from the cerebral and spinal nerves, is because that at the points enumerated branches of the cerebral nerves coming from the brain are not given off to the sympathetic, but that branches of the latter here join the cerebral nerves; the fibres thus added to the nerves being continued then, not merely to the brain, but in the peripheral direction with the cerebral nerve. If this supposition, he remarks, were of general application, we should know when a cerebral nerve, not at its root, but in its further course, presented a swelling corresponding with the point of union with the sympathetic, that the fibres of the sympathetic joining it did not come as roots of the latter from the cerebral nerve, but were fibres of the former going to join the latter.

"Should the above view be confirmed, then," the Professor remarks, "the ganglia in question—those just considered—will no longer be a distinct class, but will belong to those of the sympathetic system, and will be included in the second class. The sympathetic system would, in that case, have three kinds of ganglia.

"1. The ganglia of the middle line, or the plexus-like ganglia of the abdomen.

"2. The ganglia of the lateral cords, lying at the points of juncture of the roots of the sympathetic.

"3. The ganglia of the sympathetic, which are situated at the points of junction of this nerve with the cerebral nerves, and which modify the properties of the latter, not those of the sympathetic."

The second chapter treats of the excitability of the nerves. The action upon the nerves of mechanical and chemical stimuli, of temperature and of electric stimuli, are very fully considered; all of which stimuli, however different they may be from each other, are shown to act in the same manner

upon the nerves—namely, by exciting them; the most different causes produce the same effect, because that on which they act possesses but one kind of excitable force, and because agents in themselves the most different act here by virtue of the same quality, that of stimuli. We are unable to follow the author in his interesting remarks upon the effects resulting from the excitement of the several classes of nerves by different kinds of stimuli; the subject of the action of electric stimuli being, however, of peculiar interest, we shall present the general conclusions he has deduced in relation to it from an extensive series of experiments.

Electricity, according to Professor Müller, produces in the nerves the same phenomena of reaction that follow the application of mechanical and chemical stimuli.

“Mechanical violence, as in striking the ulnar nerve at the elbow, gives rise to the sensation of a shock; the same sensation is felt when an electric discharge is passed through a nerve. This effect must be regarded merely as a sensation; a mode of reaction of the nerves, with which its cause, the electricity, must not be confounded. The sensation of the blow or shock is not the action of the electricity, but is the action of the nerve which becomes the seat of this sensation whenever a violent change is produced in the state of its component parts, whether this change is produced by animal or mechanical stimuli or by electricity.”

The author sets out with the proposition, that in the discovery of galvanic electricity, we have not become acquainted with a fluid similar in its action to the nerves, but merely with a new stimulus of the nerves in addition to those already known. The production of muscular contraction by galvanism, as well as the particular circumstance under which it takes place, is noticed. The fact that the nerves do not act as mere conductors of electricity of the galvanic circle, is proved by the result of direct experiment, and in the same manner it is shown that the stimulus of galvanism excites in all the organs of sense different sensations, in each organ, namely, the sensations proper to it.

Having examined the immediate effect of stimuli upon the nerves, the changes produced in the excitability of the nerves by these agents are next considered: namely, diminution and exhaustion. There are, according to our author, no renovating stimuli, substances which have the power of increasing the nervous power. There are stimulants, it is true, in abundance; but, he remarks, they can strengthen the nerves only by promoting the reproductive process of nutrition in them.

The narcotics which, while they stimulate, seem to produce a change of composition in the nervous matter, are denominated by Professor Müller, *alterant stimuli*.

It is, according to him, by their property of changing the composition of the nervous matter that narcotics, in small doses, are useful in cases of paralysis, where they either remove slight material changes in the nerves, or produce such a change as enables nature to effect the cure. A more violent action of the *alterantia nervina*, or narcotics, is immediately destructive.

“The most usual mode of action of narcotic poisons, when they paralyse the sensitive and motor powers of the nerves, is by being absorbed into the blood, thence acting in the capillary vessels on the brain, spinal marrow, and nerves. Their second mode of action, which is less rapid and more circumscribed, is by destroying locally the nervous power.”

After enumerating a variety of experiments tending to prove that the rapid general action of local poisoning is not effected through the medium of the nerves, but that the poison enters the blood, and is with it distributed to all the organs of the body, the author adds, that it is likewise susceptible of proof, that

"The general symptoms of poisoning are principally owing to the action of the blood, impregnated with the deleterious substance, on the central organs of the nervous system:

"1. After death produced by poisoning, the nerves and muscles are found to retain their irritability for a considerable time.

"2. Ligature of the arterial trunk of an extremity does not exempt the latter from participating in the general effects of a poison subsequently administered, of which the action produces muscular spasms."

While, however, it is certain that the general effects of poisoning depend on the absorption of the substance into the blood, it is equally true that the narcotic poisons produce, also, a local influence. Thus a portion of the trunk of a nerve may be paralysed by the application to it of some narcotic—the influence of which latter will not be propagated along the trunk to the branches of the nerve. Nor does the narcotic action react from a particular point of a nerve on the brain.

The second chapter concludes with some observations in evidence of the dependence of the nerves on the brain and spinal marrow.

The third chapter treats of the active principle of the nerves. The remarks of the author under this head are chiefly directed to expose the falsity of an opinion which a short time since was entertained by a majority of the leading physiologists, and is still adopted by many, namely, the identity, or at least the similarity, of the nervous principle and the galvanoelectric current. The arguments urged by Professor Müller to disprove this opinion are as follows:—

"The neurilema and the surrounding parts being moist, electricity would not remain insulated in the nerves were it in action in them. It has indeed been imagined that the nerves have an insulating property. But the neurilema itself is an excellent conductor of the galvanic fluid, and the nerves, as we shall show, have not a greater conducting power than other moist animal textures; for the galvanic current does not necessarily follow the ramifications of the nerves, it is only the nervous principle which takes that course. The galvanic current is conducted off from the nerves by the neighbouring tissues as readily as it is conducted by the nerves themselves, if a more direct course to the pole is thus effected. The passage of the nervous principle again is interrupted by a ligature, while this has no effect on the transmission of the galvanic fluid.

"Electricity is known by the bodies which insulate it, and which are conductors of it; these are its sole and certain tests, and, in respect to them, the nervous principle differs from it, and consequently cannot be identical with it. Other proofs, however, derived from properties of the nervous principle already alluded to, may be adduced:

"1. When both poles of a galvanic battery are applied to a nerve, so that a galvanic current is transmitted through its thickness, the muscle to which it is distributed contracts, not because the galvanism reaches the muscle, but because the galvanic current, passed transversely through the nerve, affects it in the same way as mechanical violence, or the application of heat or caustic potash, and stimulates its motor power, the action of which is propagated only in the peripheral direction.

"2. But if one pole is applied to the nerve, the other to the muscle, the galvanism does not fly transversely through the nerve, but from one pole to the other in a

line from the nerve to the muscle; and the effect is the same as if both poles had been connected with the muscle. Here the excitability of the nerve is acted on in its whole course to the muscle.

"3. If the nerve be bruised, or tied with a ligature, between the point where both the wires are applied and the muscle, no contractions of the latter are excited. The galvanic fluid passes transversely through the nerve, as in the first case, but the action of the nervous principle is interrupted by the mechanical injury or ligature.

"4. If, on the contrary, the poles be applied, one above and the other below the injured spot or ligature, the galvanic fluid is conducted through it with perfect facility, and, stimulating the lower part of the nerve, gives rise to muscular contractions.

"5. Nerves, even when perfectly dead, are still, like all moist animal textures, capable of conducting the galvanic fluid, though they have lost the power of exciting contractions in muscles.

"6. Lastly, the experiments of myself and Dr. Sticker have shown that, when the vital influence of the nerves on the muscles has been interrupted for any considerable period, the stimulus of a simple galvanic circle is incapable of exciting their contractions."

Professor Müller conceives that the conclusions which must be drawn from the considerations which he has detailed in the chapter under consideration, are:—

"1. That the vital actions of the nerves are not attended with the development of any galvanic currents which our instruments can detect. 2. That the laws of action of the nervous principle are totally different from those of electricity. 3. To speak, therefore, of an electric current in the nerves, is to use quite as symbolical an expression as if we compared the action of the nervous principle with light or magnetism. Of the nature of the nervous principle, we are as ignorant as of the nature of light and electricity; but with its properties we are nearly as well acquainted as with those of light and other imponderable agents. However much these various principles differ from each other, the same question applies to all, namely: are their effects produced by currents of an imponderable matter travelling through space, or by the undulations of a fluid? Which theory be correct in the case of the nervous principle, is at present a matter not affecting the study of the laws of its action, just as the laws of optics must remain the same, whatever theory of the nature of light be adopted."

The second section treats of the nerves of sensation, the nerves of motion, and the organic nerves. In the first chapter, the experiments which establish the correctness of Charles Bell's theory of the sensitive and motor roots of the spinal nerves are detailed. Important and interesting as these experiments are, an analysis of them, on the present occasion, will not be necessary.

The sensitive and motor properties of the cerebral nerves, are considered in the second chapter.

Professor Müller arranges the cerebral nerves into three classes. 1. *Nerves of special sense*: the olfactory, optic, and auditory. 2. *Mixed nerves with double roots*: the trigeminus, glossopharyngeus, vagus cum accessorio, and in several mammalia, the hypoglossus. 3. *Single rooted nerves*: for the most part of motor function, which are either themselves entirely motor, and receive sensitive fibres from other nerves, or which, if their roots contain sensitive fibres, still cannot be classed with the double rooted spinal nerves. These are the oculo-motorius, the trochlearis, the abducens, and the facial nerve.

Of the mixed cerebral nerves, according to Müller, the first and second divisions of the nervus trigeminus, which arise wholly from the ganglion of the portio major, are probably purely sensitive. The third division,

which is formed in part of the *portio minor*, and receives another portion of its fibres from the Gasserian ganglion is both motor and sensitive.

The glosso-pharyngeal nerve, the author describes as having two roots, one of which has a ganglion, and as possessing both sensitive and motor powers. In a note, however, the translator adduces the experiments of Dr. J. Reid, which, if perfectly accurate, prove that the glosso-pharyngeal nerve is really a nerve of sensation only.

From the ganglion which the vagus nerve forms at the point where it passes through the foramen lacerum, it presents, according to the author, every resemblance to the sensitive root of a spinal nerve, and, as immediately after its exit from the foramen, it is joined by a portion of the accessory nerve, it is, he concludes, in the present state of our knowledge, very natural to suppose that the vagus, in fact, derives the motor fibres, which are distributed in its branches to the larynx and pharynx, from the accessory nerve.

"Goerres, indeed, had likened the origins of the vagus and spinal accessory, to the two roots of spinal nerves, even before the discovery of the properties of their anterior and posterior roots. The same idea has been more recently adopted by Professors Arnold and Scarpa, who have compared the vagus to a posterior, the spinal accessory to an anterior root; and Bischoff has carried it out, and adduced new arguments in support of this view."

The hypoglossal nerve, Mayer has discovered to possess in some of the mammalia, a small posterior root, with a ganglion, but in the human subject it has merely a motor root.

The third, fourth, and sixth ocular nerves, according to Professor Müller, have some sensitive endowment, although it is uncertain whence they derive the fibres by which they are endued with this sensitive power.

The facial nerve, or *portio dura* of the seventh nerve, Professor Müller describes as both motor and sensitive.—The principal source of its sensitive power, is described as arising from the union with it, in its course through the Fallopiian aqueduct, of a branch of the vagus.

The sensitive and motor properties of the ganglionic nerves, is the subject of chapter third. While Bichat, Dupuy, Wutzer, Magendie, and Lobstein, deny to the sympathetic, the property of conveying sensations, Flourens, Brachet, Mayer, and E. H. Weber, together with Müller, on the contrary, contend that the ganglionic nerves, are to a certain extent sensitive.

"The sensibility of the parts supplied by the sympathetic is, however, far more feeble and indistinct than in other parts, for we seldom feel in the stomach the very cold or hot food which we swallow: substances too, which are strong stimulants of the skin, such as mustard and horse-radish, are rarely productive of sensation in the parts furnished with sympathetic nerves; it requires very strong impressions to excite the whole sensitive power of these parts in as powerful a degree as can be done in other organs. This peculiarity has been explained on the hypothesis of Reil, that the ganglia have the nature of half-conductors, preventing the transmission of weak impressions, and allowing the transmission of such only as are the effects of very intense irritation. Although this view cannot be strictly demonstrated to be correct, yet it is apparently favoured by an observation of Brachet, relative to the effects of irritation of the thoracic ganglia of the sympathetic in a living sheep. Brachet states, that having divided the costal cartilages on the right side near the sternum, he held the lung towards the sternum, and then saw the thoracic ganglia of the sympathetic at the sides of the spinal column. When he pricked the ganglia, or the cord of the sympathetic between them, he perceived no signs of pain; but, when he irritated one

of the branches of communication between the sympathetic and the spinal nerves, pain was instantly manifested: this he witnessed in repeated experiments. He also observed, that ganglia, which at first appeared to be devoid of sensibility, became sensible after frequent irritation."

The ganglionic nerves have, also, according to the observations of Professor Müller a motor, though involuntary, influence on the parts which they supply. He has proved by experiments performed in conjunction with Dr. Sticker, that the contractile power of the muscles, is the result of a reciprocal action between them and the nerves, and is not a property of the muscles themselves, as Haller supposed. Humboldt, Burdach, Wutzer, and Müller have, likewise, shown by direct experiment, the motor influence of the ganglionic nerves upon the muscles.

The author enters into an examination of the composition of the sympathetic nerve. He describes it as containing sensitive, motor, and organic fibres.

"The peculiarity of the sympathetic," he remarks, "seems to consist merely in the mode in which it assembles its radicle fibres, and again distributes them in the peripheral direction. The radicle fibres run, namely, for a certain extent in the principal cord of the sympathetic, before being given off in the branches; and thus is produced an apparently continuous cord from the superior cervical ganglion to the ganglion coecygeum. I say, apparently continuous; for there are no facts to justify the conclusion, that the fibres coming from the first cervical ganglion are continued to the inferior extremity of the cord. The fibres leave the longitudinal cord in the same order as they enter it: the first form the cardiac nerves, the next the splanchnic, the next the renal, the aortic and so on. But this is not really a peculiarity of the sympathetic. It is a structure common to many other nerves; the spinal nerves, for example, have arches of communication between each other, and thus form continuous cords, extending a considerable distance, from which are given off in succession, the nerves which had previously joined them. The nerve called the *ramus descendens noni*, again, is partly formed by the superior spinal nerves; on the other hand, it sometimes happens that the cord of the sympathetic, is interrupted here and there between the points where the radicle fibres join it, or is extremely thin, as in serpents."

"It being shown that the sympathetic regularly receives fasciculi of motor and sensitive fibres from the spinal nerves, as its motor and sensitive roots, the existence of a similar relation between it and those cerebral nerves, which are analogous to the spinal nerves, in having double roots, becomes very probable. The hypo-glossal, vagus, and glosso-pharyngeal nerves do in fact give roots to the superior cervical ganglion, and thus to the cord of the sympathetic. We do not, however, mean to assert that all the fibres of these cords are motor and sensitive, for such is not the case. The ganglionic or sympathetic nerve, then, receives roots of sensitive and motor properties from the cerebral nerves which we have named. It likewise receives a similar root from the great spinal nerve of the head, the nervous trigeminus. The vidian nerve is, at least in part, a root given off to the sympathetic."

The system of gray or organic fibres, and its properties, are treated of in chapter fourth. The observations of Retzius, Van Deen, Remak and Müller, have demonstrated the existence in the cerebro-spinal, as well as in the ganglionic, of gray organic fibres. The ganglionic nerve contains the greater number of these fibres, which gives it a proportionally grayer colour; while in the cerebro-spinal nerves, the gray fibres are few in number, and are seen as gray fasciculi, lying in the larger mass of white fasciculi.

According to Remak, the gray fibres are much more minute than the white, perfectly homogeneous, that is to say, not composed, as far as can be distinguished with the microscope, of a tube and contained portion;

they are so pale and transparent, that unless a strong shadow be thrown on them, they are not visible; lastly, a completely characteristic appearance is produced by the small roundish or oval bodies, which here and there beset their surface. It is rendered very probable by the result of the long and patient investigations of Remak, that the organic fibres arise from the caudal prolongations of the globular bodies of the ganglia. Hence the organic fibres may undergo an increase in the ganglia, and the greater prevalence of gray fibres in the peripheral portion of the ganglionic system, while the main lateral cords of the sympathetic are more nearly white, is in favour of this view.

"The ganglia must, therefore, in fact, be regarded as the central organs or brains of the system of organic fibres, while the sensitive and motor fibres of the ganglionic nerves are derived from the brain and spinal cord. From the ganglia arise also the organic fasciculi, which accompany the cerebro-spinal nerves."

"Although the organic fibres do not take their rise in the brain and spinal cord, yet it is probable that they are connected with the spinal cord, through the medium of the communicating branches between the sympathetic and spinal nerves, so as to derive an influence from the central organs of the cerebro-spinal system, for Remak several times succeeded in finding organic fibres in the roots of the spinal nerves generally, as well as in the rami communicantes. What relation the ganglia of the posterior roots of the spinal nerves bear to the system of organic fibres is still uncertain. From the similarity of their structure to that of other ganglia, it might be supposed that they also serve for the origin of these fibres. This, however, would not explain their constant presence on the posterior roots of the spinal nerves. If, as has been frequently imagined, ganglia have an insulating influence on the fibres which traverse them, considering these fibres in the light of conductors, then the ganglia of the posterior roots of the spinal nerves, might have the office of deadening the violence of the impression communicated by sensitive nerves to the spinal marrow, and of thus preventing the excitement of the spinal marrow to the production of reflex motions, which do not take place except when the impression on the sensitive nerve has a certain degree of violence. This would agree too with the indistinctness of the sensations in parts supplied by ganglionic nerves of which the ganglia are more frequent. But all this is a speculation resting on a mere hypothesis."

The function of the gray organic fibres is, agreeably to the views of our author, to regulate the vegetative processes of the body—nutrition, secretion, &c.

The subject of chapter fifth,—the motor, sensitive, and organic nerves, in the nervous system of the invertebrata,—though one of great interest, we shall be obliged to pass over without further notice. This brings us to the third section of book the third, which treats of the mode of propagation of nervous action in the different nerves. After noticing the two leading opinions entertained as to the nature of nervous action, whether it be due, namely, to the passage through the nerves of an imponderable matter, or to oscillations or vibrations, the author remarks:

"In comparing the different parts of the nervous system, we find conductors and excitors of nervous action. The conductors are the nerves; the excitors, the central organs. The nerves, however, have not merely the quality of conductors, for, after separation from the brain, they are for a certain time capable of exciting, when irritated, contractions of the muscles; but, after they are thus cut off from communication with the central organs, they gradually lose this faculty."

Reference is made to the several estimates of the velocity of nervous action, and an account is given of the curious facts detailed by M. Nicolai of Mannheim, which might incline some to believe that the velocity of nervous action is different in different parts of the nervous system, and even in different individuals; an inference which Professor Müller has shown to be fallacious even admitting that the facts referred to are perfectly well established.

We shall confine ourselves to a mere enumeration of the laws of the transmission of nervous influence in motor nerves, as laid down by Professor Müller in chapter one, without attempting to present to our readers an abstract of the facts and reasoning by which the correctness of these laws is established.

"1. The motor influence is propagated only in the direction of the nervous fibres going to the muscles, or in the direction of the ramification of the nerve; never in a retrograde course."

"2. The application of mechanical or galvanic irritation to a part of the fibres of a nerve, does not affect the motor power of the whole trunk, but only that of the portion insulated from the rest, to which the stimulus is applied."

"3. A spinal nerve entering a plexus, and contributing with other nerves to the formation of a great nervous trunk, does not impart its motor power to the whole trunk, but only to the fibres which form its continuation in the branches of that trunk.—This is shown by experiments of Van Deen, myself, and Kronenberg."

The following is the author's explanation of the cause of associate or consensual movements—that is, those movements which, contrary to our will, accompany other voluntary motions. Examples of true consensual movements are very frequent, even in the healthy state of the body.—Thus, when we endeavour to contract one set of muscles, we induce motion in another set of muscles that we had not willed to move.

"The primitive fibres of all the voluntary nerves being at their central extremity all spread out in the brain to receive the influence of the will, we may compare them, as they lie side by side in the organ of the mind, to the keys of a piano, on which our thoughts play or strike, and thus give rise to currents or vibrations of the nervous principle in a certain number of primitive nervous fibres, and consequently to motions. From the conducting power of the cerebral substance at the origin of the nervous fibres, however, those which are contiguous to each other must be liable to be affected simultaneously, and the influence of volition will with difficulty be confined to single fibres. By repeated exercise, this faculty of insulating the influence of the will is acquired; that is to say, the more frequently a certain number of nervous fibres are exposed to that influence, the more prone do they become to obey it independently of other surrounding fibres; or, in other words, certain paths for the more ready transmission of the cerebral influence are gradually developed. This faculty of insulation of the influence of volition is seen to reach the highest degree of perfection in certain arts, for example, in the use of musical instruments, particularly of the piano.

"All associate movements have their source in the brain itself—they can not be attributed to a communication between the primitive fibres in the motor nerves—for, in the first place, the primitive fibres do not communicate with each other, and secondly, irritation of a portion only of a great nervous trunk never influences the rest of the nerve, but is propagated only to those branches of it which are formed of the fibres irritated.

"The associate movements cannot, moreover, be ascribed to the action of the sympathetic nerve, which maintains communications neither between different portions of a motor nerve, nor between the corresponding nerves of the two sides of the body—such communications are affected solely by the brain and spinal cord."

The following are laid down by professor Müller (chapter 2) as the laws of the propagation of the nervous influence in the sensitive nerves:

"1. When the *trunk* of a nerve is irritated the sensation is felt in all the parts which receive branches from it; the effect is the same as if all the ultimate ramuscles had been irritated."

"2. The sensation produced by irritation of a *branch* of a nerve, is confined to the parts to which that branch is distributed, and, generally, at least, does not affect the branches which come off from the nerve higher up, or from the same plexus."

"3. When, in a part of the body which receives two nerves of similar function, one is paralysed, the other is inadequate to maintain the sensibility of the entire part; on the contrary, the extent to which the sensibility is preserved corresponds to the number of the primitive fibres unaffected by the lesion." This is illustrated by the history of local paralyses.

"4. When different parts of the thickness of the same nerve are separately subjected to irritation, the same sensations are produced as if the different terminal branches of these parts of the nerve had been irritated."

"5. The sensations excited in the minute elementary fibres are transmitted from the surface to the brain without being communicated to the other fibrils of the same nervous trunk. This is a necessary inference from the facts and laws already detailed."

"6. Although pressure on a nerve gives rise to sensations which are felt in the peripheral parts, yet a stronger pressure produces pain in the nerve itself at the point to which it is applied.—We experience this but rarely, as when we suffer violent blows on the ulnar nerve." "From the facts already detailed, and others that follow this would not be expected; and there seems to be something here with which we are unacquainted, but which is important in relation to the theory of sensations." "The direction which the pain takes in cases of neuralgia, namely, along the course of the nerves, appears, likewise, not to agree with the theory of sensations above proposed. It must, however, be remarked that neuralgic pains by no means constantly follow the course of the nerves. I have examined several cases of true neuralgia in Berlin, in which the pain did not pursue the course of the anatomical distribution of the nerves. Other facts are favourable to our theory. We are in want of information calculated to elucidate these apparent contradictions."

"7. When the extreme parts are completely deprived of sensibility by pressure on a nerve, or by its division, irritation of the portion of the nerve connected with the brain still excites sensations which are felt as if in the parts to which the peripheral extremities of the nerve are distributed." "Division of a nerve, then, merely prevents the possibility of external impressions on the cutaneous extremity of the nervous fibres being felt; the impressions being no longer communicated to the brain. But the same sensations which were before produced by external impressions may arise from internal causes, as long as the primitive fibres of the trunk remain in connection with the brain or spinal cord."

"8. When a limb has been removed by amputation, the remaining portion of the nerve which ramified in it may still be the seat of sensations, which are referred to the lost part.—This is a fact known to all surgeons, and is subject to no exceptions."

"9. The relative position of the primitive fibres of the nerves at their origins, and in the nervous trunks, is not altered by a change of the relative position of their peripheral extremities, and hence we find that, when the relation of the fibres at their peripheral extremity is changed, the sensations of which they are the seat are referred to the same spots as before.—This is exemplified in the phenomena observed when the peripheral extremities of nerves have their relative position changed artificially, as in the transposition of portions of skin."—"Another phenomenon, perfectly similar in its nature to the foregoing, and explainable on the same principles, is that, when we cross the fore and middle fingers, and roll a small globular body—for example, a pea—between the opposed surfaces of the fingers, these surfaces feel those which in the natural state are turned from each other, we seem to feel two globular bodies."

The author does not appear to be decided as to the cause of the radiation of sensations, or why one sensation should excite another, or why sensations in disease should extend to parts not actually affected—whether this phenomenon is to be referred to the imperfect conducting power of the ganglia of the sensitive nerves not allowing feeble impressions on particular fibres to be propagated through them to the other fibres, confining them, hence, to the primitive fibres on which they were originally made, but, ceasing to insulate the nervous fluid, when the impressions are very energetic, conduct off a part of it to the other primitive fibres which pass through the ganglia, thus giving rise to the radiated or sympathetic sensations; or, whether these sensations are the result of the radiation of the irritation from the fibres primarily affected upon the roots of other fibres in the brain or spinal cord, just as, in the production of the reflected motions, the impression conveyed to the spinal marrow by the sensitive nerves, is communicated to motor nerves; the only difference being, that, when the sympathetic sensations are produced, the radiation of the impression does not reach the motor nerves, but only the sensitive fibres arising from the surrounding part of the cord, or at least affects these at the same time with the motor nerves. He seems, however, inclined to favor the latter explanation.

"It must be remarked, however," he observes, "that if we explain the sympathetic sensations by such reflex action, we must presuppose that currents or oscillations can be propagated in the sensitive nerves in both directions—from the brain as well as towards it. It is not known whether this be possible, or whether the sensitive nerves can propagate their actions in the centripetal direction only. It is interesting, therefore, to know that we can explain the phenomena, even though the sensitive nerves do not act in the centrifugal direction. We have seen that the same sensation seems to be produced at whatever point of its length a nervous fibre is irritated, whether at its peripheral extremity, at its middle, or at its origin in the brain and spinal cord; and that this sensation is felt in the parts to which the nerve is ultimately distributed: the mere 'radiation' of an impression, therefore, from one sensitive nerve in the substance of the brain or cord, so as to affect the origins of other sensitive fibres, will be sufficient to produce sympathetic sensations. We know in fact that, in affections of the spinal cord, the sensations appear to be in the peripheral parts of the body;—thus inflammation of the spinal cord, is attended with violent pain in the limbs."

The observations of Professor Müller on the coincidence of several sensations, especially in reference to the identity or singleness of the sensations experienced by the two optic nerves, are interesting, though not very conclusive.

According to Weber the difference in the accuracy with which individual impressions are distinguished, depends on the number, course, and mode of termination of the nervous fibres: in this opinion the author entirely coincides, merely remarking, that the greater or less facility for the radiation of impressions in different parts of the brain and spinal marrow may have some share in the production of these differences.

Professor Müller has shown that there are only certain parts of the retina or optic nerve of the two eyes of which the sensations are identical, while the sensations of the others are not so. In reference to sensations, the two retinæ must be regarded as included one within the other—so that all points of the two retinæ which lie within the same degrees of latitude and longitude (the eyes being regarded as globes) are identical in their sensations,—all other points in the two retinæ are opposed to each other,

or different, just as any two points in the retina of the same eye;—hence in double vision the impression is made in the two eyes upon points of the retinae which do not correspond in their sensation.

The author has shown that the fact of each root of the optic nerves, on leaving the commissure, not going to one eye solely, but to both eyes, does not explain the cause of single vision. To explain this it would be requisite that each primitive fibre of each root, should, in the commissure, divide into two branches for the two optic nerves, so that the identical fibres of the two nerves might communicate with the brain at one point only, namely, by one radical fibre, which is not the case.

Chapter third treats of the reflection in the production of motions consequent on impressions upon sensitive nerves. Professor Müller maintains that when impressions made by the action of external stimuli on sensitive nerves, give rise to motions in other parts, these motions are never the result of the direct reaction of the sensitive and motor fibres of the nerves on each other, but that the irritation is conveyed by the sensitive fibres to the brain and spinal cord, and is by them communicated to the motor fibres.

This law, which is of extreme importance in physiology and pathology, from its explaining a great number of phenomena in health and disease, the author proceeds to establish by the result of direct experiments.

The views of Marshall Hall on the subject of reflected motions are examined and tested by facts. The leading difference between these views and those entertained by the author will be readily perceived, by a reference to the general proposition given above.

From the facts adduced by Professor Müller, he is led to admit as a general law, that, whenever general spasms are excited by local impressions, the phenomena depend on no other communication between the sensitive and motor fibres than exists in the spinal cord. In very many cases, however, local irritations of the nerves give rise, not to general, but to local muscular spasms, in which case again, according to the author, the spinal cord is to be regarded as the bond of communication between the sensitive and motor fibres. The cases of this kind are the following:

"1. The most simple is that in which the local irritation of the sensitive fibres being propagated to the spinal cord or brain, excites merely local spasms,—in those parts, namely, the motor fibres of which arise from the spinal cord, near the point where the sensitive fibres that are irritated also take their rise."

"In muscles laid bare, the irritation applied directly to them acts also on the motor fibres distributed in them, and contractions of them are excited without any centripetal and centrifugal action of the nerve. But muscles which are invested by sensitive membranes, and are not themselves exposed to direct stimulus, can only be excited to action by irritation of the sensitive property of their investing membrane, the transmission of this irritation to the brain, and the centrifugal propagation of the motor influence from the brain to themselves."

"2. The second case is, where the excitement of the sensitive nerves is entirely local, but the reflected influence from the brain more extended." Of this we have instances in the phenomena of coughing, sneezing, hiccough, vomiting, &c.

"3. In the second kind of cases, the reflex action affects a large group of nerves—the respiratory nerves, and it is excited most frequently by irritation of a mucous membrane. When the irritation is more intense, however, the effects may be still greater, affecting almost all the nerves of the trunk, if the irritation of the spinal cord becomes extensive. Thus, in severe cases of sporadic cholera, sometimes cramps affect even the trunk."

"4. In the reflected motions produced by violent impressions on the sensitive nerves of the skin, not of the mucous membranes, the respiratory move-

ments are not sympathetically excited, but rather spasmodic contractions of the muscles supplied by the whole system of nerves of the trunk, without any spasmodic movements of respiration. Of the extreme degree of such an affection we have instances in the epileptic convulsions from local affections of the nerves, and the traumatic tetanus from injury of a nerve."

Professor Müller agrees with Dr. Hall, that the reflected motions which occur after the loss of the brain, are no proof that stimuli applied to the skin are still able to excite true sensations in the spinal cord.—in these cases, the ordinary centripetal action of the nervous principle takes place, as when sensations are produced; but here it does not give rise to sensations, since it is not communicated to the brain, the organ of consciousness.

"During life, also, in the state of health, many reflected motions are excited by irritations of membranes, which are not, as true sensations, communicated to the sensorium, but nevertheless produce strong impressions on the spinal cord; as for example, the irritation of the fæces or urine, exciting the contractions of the sphincters. But Dr. Hall goes too far in admitting that, in the healthy state, every motion which follows true sensation is voluntary, and that all irritations of sensitive parts which give rise to reflected motions are unattended with sensations—for the reflected motions of sneezing, coughing, and many others, are consequent on true sensations. The reflected motions, and the involuntary not reflected motions, must not be confounded with each other."

Important and interesting as this subject is, in every point of view, our limits will not permit us to present a more extended notice of the author's views in relation to it—no analysis would, indeed, give to our readers a correct idea of the several details connected with the physiology of reflex motions as presented by Professor Müller, and to multiply our quotations from the chapter before us would extend our review to an unreasonable length.

In the fourth chapter, the following important questions are discussed: Is the nervous principle, or force, of the motor fibres different in its qualities from that of the sensitive fibres? or, are what are here called the motor and sensitive principles, actions of the same nervous principle, differing only in direction, being centrifugal in the motor, centripetal in the sensitive fibres? No satisfactory solution of these questions, according to the author, can be derived from the facts at present in our possession. There is no positive evidence that either the sensitive or motor nerves propagate nervous irritation in one direction only. There is one circumstance in particular, he remarks, which excites still greater attention in reference to the subject. This is the fact that, for the preservation of the excitability of the motor nerves, their communication with the central organs of the nervous system is necessary: this, in appearance, is in favour of all nerves, including the sensitive nerves, being equally dependent on the brain and spinal cord; in which case, however, there would be centrifugal emanations from the latter organs through the sensitive nerves. Future experiments, founded on well conceived ideas, or new discoveries, must decide the question.

"The hypothesis of the circulation of the nervous fluid, or of its vibrations in the two kinds of nervous conductors, is, however, for several reasons very improbable; for, since many nerves are sensitive only, these must either not be the seat of a circulation, or we must suppose again that with their sensitive fibres they contain an equal number of fibres of centrifugal action, which do not give rise to motions, only because they do not terminate in muscles. Now, if we merely regard those motor and sensitive nerves which communicate by anas-

tomoses of their fasciculi, as in the instance of the facial and infra-orbital nerves, still less can we find in them the means for a circulation of the nervous fluid; for, in the first place, these anastomoses are not real communications of the primitive fibres; and, secondly, an irritation excited in the facial nerve is proved by the experiments of Gaedechens not to be communicated through these anastomoses to the trunk of the infra-orbital nerve so as to excite pain. All these considerations teach us that the existence of a regular circulation of the nervous fluid from the brain and spinal cord through the nerves back to the central organs cannot be demonstrated, and, in the present state of our knowledge, appears very improbable."

The following are the laws of action of the sympathetic nerve, and the propagation of impressions in it, as given by Professor Müller, in chapter fifth; and first of the actions of the sympathetic nerve in *involuntary motions*.

"1. All the parts subject to the influence of the sympathetic nerve are incapable of voluntary motion."

"2. The parts which are supplied with motor power by the sympathetic nerve still continue to move, though more feebly than before, when they are separated from their natural connections with the rest of the sympathetic system, and wholly removed from the body."

"3. Hence all the parts endowed with motion, and supplied with nerves from the sympathetic, are, in a certain degree, independent of the brain and spinal cord."

"4. The central organs of the nervous system can, however, exert an active influence on the sympathetic nerves and their motor power."

"5. The experiments of Dr. Philip tend to show, also, that distinct parts of the brain and spinal cord do not alone influence distinct parts of the sympathetic system, and of the motions dependent on it, but that the brain and the whole spinal cord, or every part of it, can exert an influence on the motions of the heart."

"6. The movements excited in organs which are under the influence of the sympathetic nerve, by irritation applied to them or to their nerves, are not transitory and momentary contractions; they are either more enduring contractions, or they consist of a long continued modification of the ordinary rhythmic action of the organ: hence, in these organs, the reaction consequent on the irritation is decidedly of longer duration than the action of the stimulus."

"7. The final cause of the involuntary motions, and the cause of their type, lies neither in the brain nor in the spinal cord, but in the sympathetic nerve itself. Even the influence of the ganglia is not necessary; the branches of the sympathetic going to an organ may be entirely removed, the twigs distributed to the substance of the organ only being left, and the motions will be maintained as before; the reciprocal action between the muscular fibres and these ultimate nervous twigs being apparently adequate to their production."

"8. Although, from the foregoing observations, it is certain that the extreme minute branches of the sympathetic have still the power of regulating the movements of the parts not subject to the will, yet it is not less true that both the brain and spinal cord, and the ganglia themselves, when in a state of irritation, exert an influence on these movements as long as the organs which are the seat of these movements are connected with them through the medium of the nerves. The brain and spinal cord are, however, also to be regarded as the source of the power of the sympathetic itself, which would without them become exhausted."

"9. It results, from the facts already stated, that the sympathetic nerve is charged as it were with nervous power by the brain and spinal cord, which may be regarded as the sources of nervous influence, but that, when once charged, it continues to emit this influence in the manner peculiar to itself, even when the further supply is for a time diminished. This affords an explanation for a part of the phenomena of sleep."

"10. The influence of narcotics locally applied to the sympathetic nerve does not extend to the distant organs which the nerve supplies; but these organs

may be paralysed by the direct narcotisation of the minute nervous fibrils which are distributed in them. In this respect the sympathetic resembles the cerebro-spinal nerves."

"11. The laws of reflection, stated in the third chapter of this section prevail likewise in the actions of the sympathetic nerve. Strong impressions on parts supplied by the sympathetic nerve may be propagated to the spinal cord, and give rise to motions of parts which derive their nerves from the cerebro-spinal system." [Convulsions in children from intestinal irritation—the spasmodic action of the respiratory muscles in vomiting, excited by irritation in the intestinal canal, kidneys, uterus, &c., as well as all spasmodic affections from local irritations of the abdominal viscera, are explained by this law.]

"12. Impressions on parts of which the nerves are derived from the sympathetic are communicated to the spinal cord and brain, and excite the motor influence of the sympathetic nerve by reflection, although the reflex action is here less marked than in the case of the cerebro-spinal nerves."

"13. Reflected action of the sympathetic, from an impression communicated to the spinal cord by cerebro-spinal nerves, is a more frequent occurrence."

"14. Can reflex phenomena be produced in the sympathetic nerve through the influence of the ganglia, and independently of the brain and spinal cord?—This interesting question cannot at present be decided." [Volkman, from his experiments, denies that the ganglia have the power of giving rise to reflected motions—and Professor Müller would seem also to incline to this side of the question.]

"15. We are at present entirely ignorant as to whether irritation in one organ can, through the medium of the sympathetic, give rise to sympathetic movements in another; since all the sympathetic phenomena of this kind can be explained on the principle of reflection from the brain and spinal cord."

"16. It is not proved, (and several facts have been observed which are opposed to the belief,) that the ganglia can exert an insulating action, so as to impede the transmission of motor influence from the brain and spinal cord."—[Motor influence generally and not merely voluntary influence is here referred to.]

"17. It is not certain that the ganglia are the cause of the parts supplied by the sympathetic nerve being withdrawn from the influence of the will."

"18. In certain organs, which are subject to the influence of the sympathetic and of the spinal nerves at the same time, a voluntary influence seems to be exerted only after the long continuance of a centripetal or sensitive impression. The urinary bladder presents this phenomenon."

"19. Many parts which are supplied by the sympathetic nerve, are, indeed, capable of involuntary motion only, but become associated with the motions of parts subject to volition, a part of the voluntary motor influence being communicated involuntarily to them, just as in the associate motions of voluntary muscles. Of this an example is afforded by the iris."

"20. The motions of organs which derive their nerves from the sympathetic system, have a peristaltic type. The motions are progressive in a certain direction, and the course which the motions take is dependent, not merely on the brain and spinal cord, but likewise on the nerves of the organs themselves. The cause of the peristaltic type is wholly unknown."

Secondly, of the *sensitive* functions of the sympathetic nerve.

"1. The sensations in parts, the nerves of which belong to the sympathetic system, are faint, indistinct, and undefined; distinct and defined sensations being excited in them only by violent causes of irritation."

"2. The sensitive impressions received by the sympathetic nerve, although conveyed to the spinal cord, may not be perceived by the sensorium, the organ of consciousness."

"3. The impressions which give rise to reflex motions, when conveyed to the spinal cord by the sympathetic nerve, are, in most instances, not productive of

sensations; while those impressions which are received by cerebro-spinal nerves always give rise to sensations. This is true at least of the majority of cases."

"4. The ganglia of the sympathetic nerve do not prevent the transmission of centripetal actions in the sympathetic nerve to the spinal cord; they have not an insulating power over these centripetal currents."

"5. The ganglia are likewise not the cause of the impressions on the sympathetic nerve being unattended with true sensation."

"6. In many cases, irritation of a violent nature in organs supplied by the sympathetic nerve, gives rise to sensations in those parts; in other cases, the sensations in the parts affected, the irritation being less violent, are indistinct, while distinct sensations are present in other parts supplied with cerebro-spinal nerves."

Of the first we have examples in inflammations of the intestinal canal and liver; of the second in the itching of the nose and anus in affections of the intestines; the itching of the glans penis in chronic diseases of the kidneys and bladder; in the pains of the upper extremities in diseases of the heart, and of the shoulder in hepatic diseases.

"7. The secondary sensations in cerebro-spinal nerves, consequent on irritation of branches of the sympathetic, occur especially at the extreme parts of the organs affected."

"8. That the ganglia exert a reflex action in the production of the sympathetic sensations is not proved, and many facts are opposed to the idea of their having such a function."—"The theory of the reflected sensations excited by impressions on the sympathetic is still very obscure, and, at all events, the mode of accounting for them is a subject of doubt."

Thirdly, of the *organic* functions of the sympathetic nerve.

"1. When, in consequence of impressions on sensitive nerves, secretions take place in distant parts, the brain and spinal cord are probably the medium of communication."

"2. There prevails a consent of action between the different parts of a secreting membrane; thus, the state of one spot influences the condition of the whole extent of a mucous membrane. Here it is more simple to explain the phenomena by communication of the organic fibres with each other."

"3. A particular state of one organ, such as inflammation or a secreting action in it, sometimes causes the production of a similar state in other parts. In this case we have an instance of reflected action of the organic fibres of one part upon those of another."

"4. The ganglia appear to be the central parts from which the vegetative influence is distributed to the different organs. Inflammation of the eye, and even the general phenomena of impaired nutrition, have been observed to follow injury of the first cervical ganglion."

"5. This radiating influence of the ganglia appears to be in a certain degree independent of the brain and spinal cord, since the embryo may be developed while the brain and spinal marrow are destroyed."

"6. It appears, however, that the brain and spinal cord are the main source whence the power of the organic nerves is gradually renovated, since certain affections of the brain and spinal cord, attended with paralysis, are likewise productive of atrophy."

"In concluding our inquiry respecting the sympathetic nerve," Professor Müller remarks, "we can but lament the obscurity in which much regarding it is involved: still, we think to have shown how investigations on this subject must be prosecuted; and that, by applying the laws governing the action of cerebro-spinal nerves to the sympathetic, much light has been thrown on the properties of this nerve, of which M. Magendie seemed to think so little known that he hesitated to regard it as a nerve."

From the foregoing series of quotations, which comprise a faithful summary of the views of Professor Müller on some of the most important, and, at the same time, most obscure points of physiology, notwithstanding that their extent may be objected to by some, we believe that our readers will acquire a much more correct idea of the character of the work before us, than could be derived from any analysis it would be in our power to present.

We regret that we are unable to notice the very interesting remarks of our author upon sympathies, presented in chapter sixth. He notices in succession the sympathies of the different parts of one tissue with each other—of different tissues with each other—of individual tissues with entire organs—of entire organs with each other, and of the nerves themselves, namely, sympathies of nerves with the central parts of the nervous system—of the sensitive and motor nerves with each other—of the corresponding nerves of the two sides—of motor nerves with each other—and of the sensitive nerves. Each of the particulars discussed in this chapter are of peculiar interest to the physician, from their direct bearing on all his pathological and therapeutical investigations. It would be impossible to present an accurate view of the author's observations in relation to the different sympathies, without quoting the greater part of the chapter, as he has observed the utmost conciseness in his detail of them.

The fourth section of book third, is divided into two chapters, the first of which treats of the nerves of special sense, and the second, of the ocular, the fifth pair, the facial nerve or *portio dura* of the seventh, the glossopharyngeal, vagus, accessory nerve of Willis, the hypo-glossal or ninth pair, and the sympathetic.

Sensation, according to Professor Müller, consists in the communication to the sensorium, not of the quality or state of an external body, but of the condition of the nerves themselves, excited by the external cause.

"We do not," he remarks, "feel the knife which gives us pain, but the painful state of our nerves;—the probably mechanical oscillation of light is itself not luminous; even if it could itself act on the sensorium, it would be perceived merely as an oscillation; it is only by affecting the optic nerve that it gives rise to the sensation of light;—sound has no existence but in the excitement of a quality of the auditory nerve;—the nerve of touch perceives the vibration of the apparently sonorous body as a sensation of tremor. We communicate, therefore, with the external world merely by virtue of the states which external influences excite in our nerves."

Hence the inaccuracy of all opinions founded on a supposed power of the nerves to perform the functions of each other—vision, smell, hearing and touch are the functions of separate nerves, which functions can in no instances be performed by other than their appropriate nerves.

The present section contains an admirable exposition of the present state of our knowledge in relation to the physiology of the several nerves enumerated above; an analysis of it would, however, be of very little interest to our readers, as, to be properly understood, the facts it sets forth must be studied in the form in which they are presented by the author.

In section the fifth is embraced the physiology of the central organs of the nervous system.

The activity of *all* the functions of the nerves is determined, Professor Müller remarks, (Chapter 1) by the central organs, partly under the influence of the mind, and partly independently of this influence. The

central organs connect *all the nerves* into one system, the sympathetic nerves not excepted. The only difference between the cerebro-spinal and the organic nerves in their relation to the central organs, being, that the former issue much more directly from them, while the organic nerves, although their fibres are, in company with the cerebro-spinal nerves, brought into communication with the brain and spinal cord, nevertheless have subordinate central organs in their ganglia and plexuses, from which the organic nervous influence more immediately emanates. The central organs are the exciters of the motor nerves, which conduct the motor influence of the nervous principle to the muscles, either constantly as in the case of the sphincters, or so as to produce intermittent rhythmic movements such as those of respiration, or the motor influence may issue voluntarily from the sensorium commune of the central organs, this sensorium commune being subject to the spontaneous actions of the mind.

"Impressions conveyed by the sensitive nerves to the central organs, are either reflected by them upon the origin of the motor nerves, without giving rise to true sensations, or are conducted to the sensorium commune, the seat of consciousness."

"Since the phenomena of reflection are not dependent on the sensorium commune, but on the motor apparatus of the central organs, and since this apparatus continues in activity during sleep, these motions take place then as well as in the waking state, as is proved by cough from irritation of the trachea, and many other phenomena which occur during sleep."

"The organic functions of the nerves are maintained in unimpaired force by the central organs of the nervous system. In this respect the same relation prevails between the sympathetic nerve and the central organs as with reference to the motions of parts subjected to the sympathetic. The action of the organic nerves in regulating nutrition and secretion is in a certain degree independent."

"The nervous principle is generated and regenerated in the central organs." This is proved by experiments instituted by the author and Dr. Sticker.

Chapter second, of the *spinal cord*.

In its functions, the author remarks, the spinal cord so far agrees with the nerves that it propagates actions of the nerves which enter it, to the brain, just as the cerebral nerves communicate impressions made on them immediately to the sensorium commune, and that it communicates the influence of the brain to the nerves arising from it, which thus receive through the medium of it, the cerebral influence, just as if they arose from the brain itself; in other respects, however, the spinal cord differs essentially from the nerves, in possessing properties which belong to it as a part of the central organs, and do not reside in the nerves. The spinal cord is to be regarded as the common stem of the nerves of the trunk. Hence lesions at any point of the cord induce paralysis of all those parts the nerves of which are given off from the cord below the seat of injury. The spinal cord does not merely represent in the brain all the nerves of the trunk in the aggregate, but, also, all the individual primitive fibres of these nerves singly, for affections of certain parts of the spinal cord interrupt the transmission of nervous influence to certain muscles of the trunk only, and lesion of certain parts of the brain paralyzes only certain parts of the body. The primitive fibres in the spinal cord do not unite with each other but continue their separate course as in the nerves, so as to communicate isolated sensations to the brain, and to transmit from the brain the stimulus for isolated motions. The spinal cord may, then, be regarded as a trunk formed of nervous fibres, which sends out, anteriorly and posteriorly, in

uninterrupted series, many millions of primitive fibres of motor and sensitive endowment to all parts of the body; the fibres being, between their origin and their peripheral termination, collected into numerous large and small fasciculi by means of cellular sheaths.

The fact being established, that the anterior roots of the spinal nerves are motor, and the posterior sensitive, the inquiry naturally presents itself, whether the same difference as to motor and sensitive power prevails also in the spinal cord; do the motor and sensitive fibres run separately in the spinal cord to the brain? Facts drawn from cases of paralysis would seem to determine this question in the affirmative. Whether the anterior columns of the cord are themselves motor, and the posterior merely sensitive, throughout the whole length of the spinal cord, as maintained by Sir C. Bell and Magendie, it is impossible, according to Professor Müller, to determine positively; no satisfactory facts bearing upon this point have been adduced either from experiment or disease.

The fibres of the spinal cord pass through the medulla oblongata to reach the sensorium commune.

The sensations produced by any affection of the spinal cord, is referred, as in the case of the nerves to the extreme parts.

The properties and functions which, according to the author, distinguish the spinal cord from the nerves, are as follows:

1. The spinal cord has the property of reflecting sensorial irritations of its sensitive nerves upon the motor nerves; a property which no nerve separated from the central organs of the nervous system possesses.

2. The spinal cord has the property of reflecting the action of sensitive nerves upon motor nerves, without itself perceiving the sensation.

3. The spinal cord is a motor apparatus which, even when separated from the brain, and without any external stimulus, can excite automatic movements. The nerves, at all events those of the cerebro-spinal system have not this power, although the motor action of the sympathetic system in this respect resembles that of the spinal cord.

4. "The spinal cord, although capable of exciting the motor nerves to automatic actions, nevertheless, in the healthy state, leaves a great part of the motor nerves, those supplying the muscles of locomotion more especially, in a quiescent state; while on many others it exerts a constant motor influence; maintaining thus constant involuntary contractions, which are arrested only by the spinal cord becoming paralysed. The motions of this kind are, 1. those of muscles which are also subject to the influence of the will as the sphincter ani; 2. those of muscles not subject to the influence of the will, as the sphincter vesicæ urinæ, the muscular coat of the intestines, the heart, &c. For these actions the spinal cord must possess a special apparatus more independent of the sensorium commune than that part of it which is engaged in the voluntary actions; though this cannot be demonstrated anatomically."

5. The spinal cord has a great tendency to propagate a particular state of one part of it to other parts; in this property it differs entirely from the nerves.

6. The spinal cord when in a state of great irritation, whether this arise from inflammation, from violent irritation of nerves as in traumatic tetanus, or from the action of narcotic poisons, emits a constant motor excitement to all the voluntary muscles; (tetanus; epilepsy;) a similar state of irritation of the spinal cord, but slighter in degree, giving rise to intermitting movements, is observed in the diseases attended with chronic spasms, as chorea. &c.

7. The *force of our voluntary movements is also dependent on the motor tension of the spinal cord.*

8. The spinal cord is the source of the sexual power, the exercise of the sexual functions depends on it.

9. "The influence exerted by this organ upon the organic chemical processes of the capillaries, through the medium of the organic nerves, is evidenced not only in the altered state of the cutaneous secretion in syncope, but still more clearly by the condition of the skin, in men in whom the spinal cord has become affected in consequence of sexual excess. In these cases there is not merely general loss of power, but also diminished turgescence of the skin, diminished perspiration, dryness of the skin, and defective generation of heat, the feet, hands, and genitals are cold."

10. "The spinal cord is also the subject of a morbid impression in all febrile affections, and the peculiar alteration of the sensations and motions and of the organic processes, the secretion and generation of heat, in fever can only be accounted for by the influence of such an organ as that which we have been considering in this chapter."

The third chapter is devoted to the physiology of the brain. We pass over the first division of the chapter which treats of the comparative anatomy of the brain of vertebrate animals; the author's observations under this head will not admit of analysis. In the second division are considered the powers of the brain, and the mental faculties generally.

The brain undergoes, according to the author, a gradual increase of size from fishes up to man, in accordance with the developement of the intellectual faculties; this increase in size, however, is chiefly confined to the cerebral hemispheres. The cerebellum, also, becomes proportionably larger in animals higher in the scale, but in a far less marked degree. The corpora quadrigemina are actually smaller in proportion to the rest of the body, and the medulla oblongata, and its prolongations in the brain are not proportionably larger in man than in any other animal.

Professor Müller adduces the various arguments which prove that the brain is the seat of the mental faculties, that the mental functions are performed in no other parts of the nervous system, or of the body generally, but in the brain alone. The relation in which the other viscera stand to the mental emotions, the professor admits to be still involved in much obscurity. He is not acquainted, however, with a single fact which proves that in a healthy person a particular passion affects one organ more than another.

"Although we are satisfied," he remarks, "upon grounds derived partly from comparative anatomy, and partly from physiology and pathology, that the seat to the mental operations is the brain and no other part; that the nerves excite these operations and are the instruments for executing what the mind directs, and that all the other parts of the body are subject to the influence of the nerves, still this amounts to nothing more than that the brain by its organization is the instrument by which the mind operates and is active: we do not assert that the 'essence' of the mind has its seat in the brain alone. It is possible for the mind to act, and receive impressions, by means of one organ of a determinate structure, and yet be present generally throughout the body."

The two following facts, according to the author, prove conclusively that the mind, although its only seat of action is the brain, is itself, nevertheless not confined to it. The first is that animals low in the scale propagate their species by spontaneous division, and as each portion of the divided animal evinces a separate will, and special desires, we have a distinct proof that the mental principle of these lower animals, whether it be or be not identical with their vital principle is also divisible. The second fact is

that in the higher animals and man, the female germ and male semen must contain all that is necessary for the manifestation of the independent vital principle and the mental functions of the animal. In one or both of them the vital and mental principle must exist as it were in a latent state, for otherwise these principles could not manifest themselves, as they are observed to do, during the after development of the new individual. The action of the mind is dependent, nevertheless, on the integrity of the fibrous structure and composition of the brain. The mode of mental action is always determined by the modification of structure and condition of the organ; hence lesions of the brain invariably affect the operations of the brain, but the mental "essence," its latent power, as far as it does not manifest itself, appears to be independent of all changes in the brain.

The author enters into an examination of the question, whether the vital and the mental principles are distinct, or whether the operation of the mind is merely a mode of action of the vital principle? But as he admits that it is not capable of solution by physiological facts, it is unnecessary to attempt an analysis of his remarks in relation to it. The same observation may be made in reference to another question discussed in the present chapter, whether, namely, mind be a property of matter, or an independent power, or principle.

We can afford space for only a very general view of what Professor Müller has advanced in reference to the functions of the medulla oblongata; his account of the course of the different columns or bundles of fibres of which it consists is particularly interesting but too long to permit us to extract it.

The medulla oblongata has the general properties of the medulla spinalis; it has the property of reflection in a higher degree than any other part of the nervous system; it belongs to the motor apparatus, and no part has so great an influence on the production of motions; irritation of it excites convulsions of the whole trunk, and by lesions of it the whole trunk is paralysed. The following properties, according to our author especially distinguish it.

1. It is the source of all respiratory movements;
2. It is the seat of volition;
3. It is the seat of the faculty of sensation.

This, he conceives, is not merely shown by the anatomical fact that all the cerebral nerves, with the exception of the first and second, are connected with it, or with its prolongations in the brain, but is proved also by the history of experiments on different parts of the encephalon. It is not true, however, that the medulla oblongata is the central organ for all sensations; in a restricted sense, it is certainly the receptacle for all the sensations of touch; but, it would appear that the central organs of the different senses are independent of each other; if they do in part belong to the prolongations of the fasciculi of the medulla oblongata, still it appears that their actions may be isolated, a reciprocal action of each with the hemispheres of the brain being necessary for a distinct perception of the sensation of which it is the seat. This is probable, Professor Müller remarks, but many facts are wanting to prove it.

The *corpora quadrigemina* of mammalia, and the *lobi optici* of birds, reptiles, amphibia, and fishes, belong, with the optic thalami of the higher animals, to the central apparatus of the sense of vision.

The functions of the *cerebellum* have been made the subject of interesting experiments, by Rolando, Flourens, Magendie, Schoepe, and Hertwig.

M. Rolando constantly observed that the diminution of the movements was in a direct ratio with the lesions of the cerebellum; that stupor was never produced nor the sensibility of any part of the body impaired; but that the power of muscular movements was lost. M. Flourens, whose experiments are clearer and more decisive in their results, infers that the cerebellum belongs neither to the sensitive nor to the intellectual apparatus; and that it is not the source of the voluntary movements, although it belongs to the motor apparatus: the infliction of wounds in it does not, however, he says, excite convulsions; but the removal of it destroys the force of the movements, and the faculty of combining them for the purposes of locomotion.

"If this view be correct, Professor Müller observes, the cerebellum must contain a certain mechanism adapted to the excitement of the combined action of muscles, so that every disturbance of its structure must destroy the harmony between this central organ of combined motions, and the groups of muscles with their nerves. It is also to be remarked, that injury to the cerebellum always produces its effects on the opposite side of the body."

The observations of Flourens are confirmed by Hertwig. M. Magendie found that wounds of the different portions of the cerebellum caused various disorders in the voluntary movements; these experiments are too well known to require that they should be more particularly noticed here. The results were, to a certain extent, the same in Hertwig's experiments.

In regard to Gall's doctrine that the cerebellum is the organ of the sexual impulse, Professor Müller regards the grounds upon which it is founded as not conclusive, while several facts are met with in opposition to its correctness.

All the facts derived from comparative anatomy, and from direct experiment, prove that the cerebral hemispheres are the seat of the higher intellectual faculties—that in them the sensorial impressions are not merely perceived, but are converted into ideas, and that in them resides the power of directing the mind to particular sensorial impressions—the faculty of attention.

"In what respect," the author remarks, "the medullary and the gray substance of the hemispheres differ with regard to function, we are quite ignorant. The capacity of the mind in different animals manifestly increases, *pari passu*, with the extension of the surface of the cerebral convolutions; but we have not the slightest knowledge of the nature of the influence exerted by the gray cortical substance into which the innumerable fibres which pass through the optic thalami at last radiate. We are ignorant of the nature of the change produced in the medullary fibres, in the cortical substance or in the principle which animates it, when an idea makes an impression on the highly susceptible substance of this wonderful structure."

"It is probable that there is in the brain a certain part or element set apart for the affections, the excitement of which causes every idea to acquire the intensity of emotion, and which, when very active, gives the simplest thought, even in dreams, the character of passion; but the existence of such a part or element cannot be strictly proved, nor its locality demonstrated. Still less can it be shown that, independent of such an element of the mind, the particular tendencies of the thoughts and passions have their special seat in distinct districts of the hemispheres."

This view, which forms the ground work of the doctrine of phrenology, Professor Müller entirely rejects, not because it involves an impossibility, but because there are, in his opinion, no facts calculated in the slightest

degree to prove the correctness of the hypothesis generally, or the correctness of the details founded upon it. But we cannot follow him in his further remarks on this subject.

With regard to their action in the intellectual functions, one hemisphere of the cerebrum, the author remarks, appears to be capable of performing the office of both. Cases have been observed, at least, in which permanent diseases, or even complete atrophy of one hemisphere has left the mind unimpaired. The commissures appear to be the cause of this union of action of the hemispheres. The influence of the corpus callosum is not quite certain; neither its presence nor that of the fornix would appear, from a case recorded by Riel, to be necessary for the exercise of the lower mental faculties. Tumours and hydatids have been found attached to the corpus callosum in idiots, and La Peyronnie observed loss of memory attending lesion of that part of the brain.

The functions of the pituitary and the pineal gland are, we may say, entirely unknown.

The present chapter concludes with some very interesting remarks on the laws of action of the brain and spinal cord; of these we are able to notice but a few of the more important.

The experiments of Flourens and Hertwig show that of the motor apparatus some when wounded excite convulsions, while of others the mutilation diminishes the motor power without causing muscular spasms to ensue. The first class includes only the corpora quadrigemina, the medulla oblongata, and the spinal cord; to the latter class belong all the motor apparatus of the encephalon, namely, the optic thalami, the corpora striata, the pons Varolii, and the cerebellum.

“From experiments on animals, and pathological observations, it results that lesions of the spinal cord and medulla oblongata always cause convulsions or paralysis on the same side of the body. This is quite intelligible in the case of the spinal cord, for in it there is no decussation of the fibres of the two lateral halves; but, with reference to the medulla oblongata, the above result of the experiments of Flourens and Hertwig is not perfectly consonant with the anatomical structure of the part—for since, in the medulla oblongata, the fibres of corpora pyramidalia at least decussate, while those of the other fasciculi continue their course on the same side of the spinal cord, it would be expected that, according to the part of the medulla oblongata affected by the lesion, the consequences would be observed on the opposite or on the same side of the body. M. Lorrey had indeed observed, that when wounds were inflicted upon the medulla oblongata, the convulsions were constantly on the same, the paralysis on the opposite, side of the body. To this result, however, those of the experiments of Flourens and Hertwig are directly opposed; but we must recollect that their experiments were instituted principally on the lateral columns only, which do not decussate; and it is very probable that, if the corpora pyramidalia be wounded above the decussation of the fibres, the effects produced would be seen on the opposite side of the body.”

Injuries inflicted on the cerebellum, the corpora quadrigemina, and cerebrum are always productive of loss of power on the opposite side.

Flourens, Professor Müller remarks, appears to have gone too far in concluding that lesions on one side the cerebrum cannot give rise to convulsions on the same side of the body: in the cases of lesion of one side of the brain, collected by Burdach, convulsions occurred in twenty-five cases on the same side as the disease, in three only on the opposite side. In cases of lesion of one corpus striata, there were, with thirty-six instances

of paralysis of the opposite side of the body, convulsions of the same side as the disease in six instances, and in no instance convulsions of the opposite side.

"When the decussation of the corpora pyramidalia of the medulla oblongata became known, the explanation of the cross actions of the brain by this structure was too obvious not to be immediately adopted; and the concurrence of the cross influence of the brain with this structure of the corpora pyramidalia, proves that these are the parts in the medulla oblongata which are principally engaged in conducting the motor influence from the brain to the trunk. There is great difficulty in explaining the modes of action of the brain in its influence on the cerebral nerves of the opposite or same side of the body. For since these nerves arise, for the most part, above the point of decussation of the pyramidal bodies, the cause of the cross action of injuries of the brain on these nerves must have some other seat; and what involves the question in still more difficulty, is, that in man, the nerve of the same side is as frequently affected as that of the opposite in cases of cerebral lesion."

From the facts he has laid down relative to the laws of action of the brain and of the spinal cord, Professor Müller proposes a classification of the different kinds of paralyzes and convulsions, with a reference to the seat of the cause which produces them.

1. *Paralyzes*.—Paralysis may have its seat in individual nerves, or it may be the result of disease of the brain and spinal cord. The first or local paralysis arises from any cause which destroys in the nerves their power of propagating nervous action, as rheumatic affections, division, tumours, &c. When the cause of the paralysis is seated in the central organs, the loss of power affects either a vertical half of the body, hemiplegia, or a horizontal half, paraplegia. In the first form, the cause has its seat on one side of the brain and spinal cord; in the second, it is generally seated on both sides, but may be on one side only.

a. *Paralysis from Diseases of the Spinal Cord*.—Here the disease is generally indicated by the extent of the parts paralysed. Injury of the lumbar portion of the cord constantly paralyses the lower and never the upper extremities. If the arms be paralysed, the lesion must have its seat above the origin of the brachial nerves—but the lower limbs are in this case not necessarily affected. Lesion of the medulla oblongata paralyses the cerebral nerves which arise from it, as well as the whole trunk. The effects of disease of the spinal cord are always seated on the same side as the lesion. When the sensibility only of the limbs is lost, the cause, most probably, but not constantly, has its seat in the posterior columns of the cord; if it be motion which is lost, the anterior columns are more frequently, but not invariably, the seat of the lesion. Paralysis from disease of the spinal cord is sometimes complete; the propagation of cerebral influence being wholly interrupted at some point; at others incomplete, the influence of the will being still transmitted to the muscles, but the intensity of the motor power is lost—this is what is observed in atrophy of the spinal cord or *tubes dorsalis*.

b. *Paralysis from Disease of the Encephalon*.—The paralytic affections of this class may present themselves in any part of the trunk, in the face as well as in the upper and lower extremities. Hence, paralysis of the leg, and of the sphincters, may be the result of disease of the brain or of the spinal marrow. We may infer it to depend on the first when other parts or functions are affected which are under the influence of cerebral nerves, as the muscles of the eye, vision, hearing, speech, &c. The paralysis

may consist of either loss of motion or of sensibility, or of both. The first form may depend on lesion of the corpora striata, the optic thalami, the investments of the cerebral hemispheres themselves, the corpora quadrigemina, the pons, the medulla oblongata, or the cerebellum. Serres, Bouillaud, and Pinel Grand-Champ maintain that they have found paralysis of the upper extremities more frequent from disease of the optic thalami; paralysis of the lower extremities from disease of the corpora striata; this is not, however, an established fact. When it is sensibility that is impaired, the seat of the disease varies. Blindness most frequently results from degeneration of the cerebral hemispheres, particularly of the optic thalami, or from disease of the corpora quadrigemina. Loss of common sensation is most frequent in disease of the medulla oblongata. Paralysis from encephalic lesions may be complete or incomplete; the loss of motor power is most prone to be complete when the lesion is seated in the corpora striata, optic thalami, crura cerebri, or pons. Incomplete paralysis is most generally dependent on disease of the cerebral hemispheres, or of the cerebellum. The paralysis is most apt to be attended with convulsions or spasmodic contractions of muscles, when the corpora quadrigemina, the medulla oblongata, or the parts at the base of the cerebrum, are the seat of the disease. Paralysis of the trunk is generally on the opposite side to the disease—paralytic affections of the head as frequently on the same as on the opposite side.

II. *Convulsions*.—Their cause may be seated in the nerves, in the spinal cord, or in the brain.

a. *From Disease of the Nerves*.—Such are the convulsions caused by reflection on motor nerves, by the spinal cord or brain, of an influence communicated to them, either from local diseases of nerves, as tumours or neuralgic affections—from any strong impression on sensitive nerves; or, in children, from any local disease.

b. *From Disease of the Spinal Cord*.—These are regulated by the same laws as paralytic affections from disease of the same part.

c. *From Disease of the Brain*.—These also observe the same laws as paralysis from cerebral disease. Lesions, however, of the cerebral hemispheres, the cerebellum, and the pons, are more prone to cause paralysis—lesions of the corpora quadrigemina and medulla oblongata, to cause both paralysis and convulsions.

Being desirous to present to our readers a tolerably full outline of that portion of Professor Müller's work which treats of the physiology of the nervous system, embracing, as it does, one of the most complete expositions of the present state of our knowledge in relation to that most important subject, we have left ourselves no space for a notice of the succeeding division of the work—which treats of motion, voice and speech. Even had we seen proper to condense our analysis of the preceding division within a much smaller compass, we should have been equally obliged to pass over the author's very able summary of the facts in relation to the last mentioned subjects. To present a satisfactory analysis of this portion of the elements would be scarcely possible; we shall content ourselves, therefore, with a very brief notice of one or two particulars connected with the physiology of motion.

"The vital motions of the solid parts of animals," remarks Professor Müller, "present *two* principal kinds, differing in the organs of their production, in their phenomena and their causes: they are, the motion from contraction of fibres,

and the oscillatory motion of *cilia* with free extremities, in which no other organic apparatus of motion can be distinctly demonstrated. The *first kind* of motion is produced by the shortening of fibres, which either have a longitudinal direction, and are fixed at both extremities, or form circular bands; the contraction or shortening of the fibres bringing the fixed parts nearer to each other. This kind of motion is generally effected by means of muscular fibres; in some few instances it is produced by fibres which differ from the muscular in structure and chemical properties. The *second kind* of motion consists in the vibration, in a determinate direction, of *microscopic cilia* with which the surfaces of certain membranes are beset. Here only the base of the motor organ is attached. By the motion of the contractile fibres, and especially by muscular motion, solid parts of the body are approximated to each other, or fluids are impelled onwards in muscular tubes. By the motion of cilia, fluids and minute microscopic particles of solid matter are merely made to move over the surface of membranes; the fluids do not here fill the entire cavity of the tubes, nor do the membranes themselves contract. The motion due to contractile fibres prevails much more extensively through the body than the ciliary motion."

The motion of vibrating cilia is observed on certain membranes both in the animal and organic portion of the body; it is probable that it exists, at least in some of the lower animals, in the interior of the vessels. It is seen in many of the lower animals over the entire surface. In the higher animals, it is seen on the surface of the body during the embryo state only. It has been observed by Purkinje, to exist in the parietes of the ventricles of the brain, both in the embryonic and adult state of mammalia. In the higher animals, the mucous membranes (not all of them) present it even up to man himself.

"It is possible," the author remarks, "that the motion of nutritive fluids which is observed in the lower animals where there is no heart and no distinctly contracting vessels, is, in all cases, merely the effect of the motion of cilia; and the circular motion of the sap in the cells of many plants may be produced in a similar way."

The ciliary motion does not exist, in mammalia and birds, either in the cavity of the mouth or in the pharynx and œsophagus. It has been found in the mucous membrane of the larynx, trachea, and bronchi, by Puskinje and Valentin, in all the air breathing vertebrata. In the nasal cavity, the frontal and maxillary sinuses and in the Eustachean tube it is invariably present. In vertebrate animals, it has been found by Purkinje and Valentin to occupy the mucous surfaces of the female organs only—it is entirely wanting in the urinary organs of the vertebrata. It has been discovered on the lining membrane of the ventricles of the brain by Purkinje and Valentin in man, many mammalia, birds, amphibia and fishes. It extends through all the ventricles of the brain, and all the cavities of the brain and spinal cord in the fœtus and embryo. In relation to ciliary motion:

"In the present state of our knowledge, thus much may be advanced:

"1. That the ciliary motion of the mucous membranes is due to the action of some unknown contractile tissue.

"2. Which lies either in the substance of the cilia or at their base.

"3. That this tissue resembles in its contractility the muscular and other contractile tissues of animals.

"4. That its properties in so far agree with those of the muscular tissue, at all events with that of the involuntary muscles of the heart, and with the vibrating laminae of the lower crustacea, that the motions which it produces continue without ceasing with an equable rhythm.

"5. That its properties agree also with those of the muscular tissue of the heart, in its motions continuing long after the separation of the part from the rest of the animal body.

"6. That this tissue differs essentially, however, from muscle, in the circumstance of its motions not being arrested by the local application of narcotics.

"7. That the ciliary motion presents itself under conditions where it is not probable that a complicated organisation exists, namely, in the undeveloped embryos of polytiferous animals."

The muscles of animal life, according to Professor Müller, are distinguished from those of the organic portion of the body, not merely by their moving under the influence of volition, by their deeper red colour and greater solidity, but also by the great difference in their microscopic character. The primitive muscular fasciculi of the animal system present, under the microscope, transverse markings, while the primitive fibres of these muscles have regular enlargements following each other in close succession; the fasciculi of the muscular coats of the intestines, urinary bladder and uterus are destitute of these cross markings, and their primitive fibrils are uniform, not varicose threads.

Professor Müller describes three modes in which muscles can become shorter during their contraction: 1. By the zigzag inflexion of the muscular fasciculi. 2. By the contraction of the primitive fibres, which contraction Lauth supposes to be effected by the approximation of globules composing the fibres; and 3. By the approximation of the bead-like enlargements, and contraction of the interspaces between these enlargements of the primitive fibres.

"Such a mode of contraction," he observes, speaking of the latter, "can neither be demonstrated, nor proved not to take place. The absence of the beaded enlargements in an entire class of muscles would render any theory of muscular contraction defective which was based on them. Still, the approximation of the globules of the primitive fibre may very possibly take place in the muscles of animal life, in addition to the other modes of contraction which are seen in the primitive and secondary fasciculi; and that there are in fact some reasons for believing that in them it actually does occur."

But we must here close. To such as desire to make themselves acquainted with all that is at present known concerning the physiology of motion, of voice, and of speech, we recommend a careful study of the several sections of the work before us devoted to these subjects. D. F. C.

ART. XV. *A Treatise on the Nature, Symptoms, Causes and Treatment of Insanity, with Practical Observations on Lunatic Asylums, and a Description of the Pauper Lunatic Asylum for the County of Middlesex, (Eng.) at Hanwell, with a Detailed Account of its Management.* By Sir W. C. ELLIS, M. D., Resident Medical Superintendent, and formerly of the Asylum, Wakefield. London: 1838. 8vo. pp. 344.

SINCE the appearance of the valuable work of Dr. Prichard upon the Diseases of the Mind, the volume of which the title forms the caption to this article, is the most important that has been published in the English

language. The author is a gentleman of long experience in the management of the insane. Sir William Ellis, as he informs us in the preface of his book, has resided in the Asylums of Wakefield and Hanwell nearly twenty years. During this period, more than 2700 cases of insanity have come under his "immediate care and observation." The volume contains 344 pages, and is divided into ten chapters, the subjects of which are as follows, viz:—Chap. 1. Introduction; in which his theory of the disease is set forth;—2. The nature of insanity;—3. Causes;—4. Symptoms;—5. Idiocy and fatuity;—6. Treatment;—7. Apoplexy, epilepsy, and the diseases of the insane;—8. On the construction of Asylums, and their mode of management;—9. On the distinction between conduct which is the result of moral evil and that which arises from insanity;—10. Conclusion.

It is not a compend of statistics, its object being "to point out the symptoms by which an attack of the disease (insanity) may be foreseen, and the means by which it may be warded off: and, in those cases where it has already supervened, to explain the mode of treatment most likely to restore the patient to reason and society; and, where this is impossible, to show how the suffering may be alleviated, and life rendered, if not a state of happiness, at least one of moderate enjoyment."

In the second chapter the author enters into an argument, somewhat prolix, to demonstrate, 1st, That "man is sane when the manifestations of his mind, his sentiments, passions and general conduct continue either to improve or to keep in accordance with the exhibitions of his previous powers and habits:"—2d, That "there is a necessary connection between the mental manifestations and the state of the brain; and that, at all events, in extreme cases of complete torpor and excited action, the injurious alteration that results in the intellectual manifestations and the conduct, is to be traced to the state of the brain:"—And, 3d, that, "as we know that the assistance of the brain is necessary to our intellectual manifestations, to our sentiments, and to our passions," we may "reasonably infer that the injurious alteration which is the invariable attendant upon insanity, may, in like manner, in less extreme cases, be traced to the brain."

With all due deference to the author, both as a skillful physician and a learned man, we must avow that we were not a little surprised at finding him advance a claim of originality to a theory of this kind. An attempt to prove the first of the three propositions, which, in the work, are arrived at as "conclusions," or inferences, we consider to be an absurdity almost as glaring as an endeavor to substantiate, by mathematical demonstration, the axioms of Euclid. To what standard of the normal action of the mind of any individual can we refer, if it be not to its previous action? Certainly to none, excepting in "cases of idiocy, imbecility, eccentricity and moral evil," which the author himself excludes from his pseudo-original "conclusion."

With regard to the second proposition, our surprise that it should be claimed as original arose from the fact that the principle therein involved is identical with that which we have long maintained in reference to insanity, and what we believed to have been the sentiment of Spurzheim, Combe and a host of other writers on phrenology and physiology. We believe it to be a principle almost inevitably arrived at by the attentive student of human physiology. It is evident, from various parts of his work, that the author is a thorough-going phrenologist, believing in the details of that

science to an extent to which we cannot follow him, and carrying its principles into practice to a degree beyond what, it appears to us at least, facts will sanction. Speaking of the opinions respecting insanity which have prevailed in different ages, he acknowledges that "within a last few years the doctrine of its being a bodily disease seems again to prevail." It appears to us that this is equivalent to an admission of a want of originality in the theory under notice; for, among intelligent men, who, that believes in the "doctrine of its being a bodily disease," would presume to attribute it to any portion of the body, other than the brain?

In justice to the author we make the following extract from his work, showing that the first proposition, or "conclusion," was not wholly uncalled-for, whether it did or did not originate, primarily, in the mind by which it is now promulgated.

"The history of the last few years will, unfortunately, bring to our recollection too many fatal incidents which have arisen from individuals of the most exalted rank not having been properly confined, solely because, in their insanity, they have exhibited intellectual powers greater than those which are usually found among mankind; although, if their previous habits and capacities had been attended to, such an alteration would have been seen as would have proved the necessity for confinement."

But, to come to the theory: the author adduces, in its support, the results of autopsic observation. He says that "in old cases, diseased organization of the brain is almost invariably found;" and again, in recent cases, "though organic lesion is rarely perceived, yet the vessels on the whole surface of the brain are surcharged with blood, and clearly indicate the existence of increased cerebral action." Of 154 male patients examined after death, "145 had disease, very strongly marked, either in the brain or the membranes. Of the nine remaining, two were idiots from birth; one died of dysentery, another of epilepsy; the other five cases had not been insane more than a few months, and died of other diseases. Of the females, 67 were examined, and 62 found with disease in the brain or membranes; in the other five no disease was to be discovered. Two of these were idiots from birth, and, with one exception, the others recent cases."

No other observer has found organic lesions of the encephalon or its meninges in so great a proportion of cases as has Sir William Ellis.—Whether this has arisen from a more accurate observation of pathological phenomena, or from that tendency, so universally existent, to magnify appearances whenever a favourite theory is to be supported, we are unable to determine; but we are induced to believe, that it is from the former.

The concluding part of the second chapter is devoted to a discussion and attempted refutation of some objections to the theory that insanity is a purely mental disease, and "a consideration of the extent of the alteration which must exist before it becomes requisite to treat the patient as insane." In respect to the latter subject, the conclusion is deduced, that when there is a lesion of the powers of perception, and the reason is not affected, or if the latter be affected so that it cannot correct the false impressions, and those impressions are not of such a nature as to interfere with the ordinary occupations of the patient, or render him obnoxious to society, he ought not to be taken from his family and friends. This principle is illustrated by cases. In the same way, where the judgment or the power of reason

is so far affected as to prevent the individual from arriving at accurate conclusions, confinement or restraint ought not to be resorted to, so long as those conclusions are unproductive of harm, either to the patient or to others. In pursuing the question, the author adverts to the temporary insanity produced by intoxication, which arises from a voluntary act, and concludes with the following distinction. "If the paroxysms (of insanity), however violent, result from causes within the immediate control of the individual, he ought to be amenable to the laws for his actions; if, on the contrary, they have their origin from sources entirely or remotely out of his reach, justice, as well as humanity would attribute the act to madness, and forbid his punishment."

On the Hereditary Predisposition to Insanity.—At the present day, the arguments from analogy introduced by the author, are hardly required to demonstrate that, by a similarity of organization or of molecular arrangement, between parent and child, the latter may, and but too frequently does, inherit a predisposition to mental disease. Of 1380 patients under the care of Sir W. Ellis, it was found that the parents or relations of 214 had previously been insane. In 125 of them, no cause of the disease, other than hereditary taint, could be ascertained. The others were produced by moral and physical causes. Great importance is attached to a proper education as a means of preservation from insanity. Habits of self-government should be taught in early life, that the individual may be able to support unharmed, the various trials which may be met with in after life. Infant schools are deprecated, on the ground that they exercise the brain to too great an extent, before it has acquired a consistence suitable for labor. A diminution of the force of the mental powers and a tendency to encephalic disease, are believed to be the necessary results. The hereditary predisposition is so strong, in some persons, that no method of education can preserve them from the disease. Particular forms of insanity especially that accompanied by a suicidal propensity, are often inherited. A woman, S. T. became insane. Her mother and two of her sisters had hung themselves. She was prone to commit suicide and after having been deranged more than two years, effected it, by hanging. The children of relatives by blood, who have intermarried, are predisposed to insanity. This is asserted to be true, from the observation of both the author and others.

Causes of Insanity.—On the supposition of the truth of the theory of insanity set forth by the author the causes of the disease are reduced to two classes: 1. those which act primarily on the brain and nervous system, and 2. those which cause disease in these organs merely by sympathy.—In the first class are arranged, 1. Blows on the head; 2. Insolation, or *coup de soleil*; 3. Old age; and 4. Over exertion. Cases are reported illustrative of each of these causes. In reference to some cases of insanity attended with stupefaction, caused by blows on the head, which cases have been instantaneously cured, it is asked, "As in apoplexy, a very small quantity of blood, suddenly effused, is sufficient to produce death, may not some part of the brain be internally pressed upon in these cases, by the sudden accumulation of a very little access of fluid, yet still sufficient to cause the stupefaction? Is it unreasonable to suppose that this pressure may be taken off by some internal operation, as instantly as that of the bone by the trephine?" In illustration of this peculiar variety of insanity, the case is reported of a man, 30 years of age, who was insane

three months, no cause for the disease being known. One morning he was found to be restored to mental health, but could remember nothing which occurred during the period of his alienation. Senile insanity, or that of old age, is very properly attributed to a brain, "weakened and worn out." The mind itself remains unchanged, the intellectual faculties and the moral affections retain their integrity and their brightness, but the organ through which they are manifested, injured like every other portion of the body, by continued exertion, no longer preserves the power of such perfect action as it exhibited in earlier years. In every case of senile insanity which was examined after death, lesions of the brain or its meninges were discovered. The pathological appearances of five of them are reported. In one, the dura mater adhered to the cranium; in two the pia mater was thickened; in one the arteries minutely injected; in three the arachnoid was opaque, being thickened also in two of them; in one there was serum between the membranes, and in another, beneath the arachnoid. In three the substance of the brain was soft; in one it was flaccid, shrunk and exsanguineous. The quantity of serum in the ventricles varied from two to eight ounces. In one case the plexus-choroides had hydatids on both its sides, the septum lucidum was open and the cerebellum flaccid.

It is asserted that over exertion is "by far the most general primary cause of diseased action of the brain and, therefore, of insanity." The *modus operandi* of this cause is described, and cases illustrative of it are adduced. The cases produced by intellectual effort, are not alone referred to this head, but also a very large proportion of those which arise from moral causes. Among the patients in the asylums at Wakefield and Hanwell which are institutions for the poor, *distressed pecuniary circumstances* is the predominating moral cause of the disease. The most frequent instances of insanity, thus produced are among the honest and industrious. Poverty is not only the frequent original cause, but it occasionally induces a relapse of the malady. Interesting cases are related, in which timely pecuniary aid probably prevented results of this kind.

Grief and intense thought upon religious subjects hold the next rank, in reference to the number of cases which they produce. We have remarked in a former paper, that in the statistics by Esquirol, of the asylum, at Charenton, not an individual case is referred to religious thought as its cause. The paucity of cases having this origin, upon the continent, is adverted to by Sir W. Ellis, and satisfactorily accounted for by the prevalence of "infidelity among the higher orders" and "ignorance and blind superstitious obedience to the dictum of the priests, amongst the lower classes," together with the fact that religious discussion is prohibited in some of the continental countries. In the experience of the author by far the largest portion of patients whose insanity was produced by grief were females. A majority of these became deranged from the loss of children. Joy and fear are next referred to as moral causes. An interesting case attributed to the former is quoted from Dr. John Mason Good. One produced by the latter, and which came under the observation of the author, is reported. In connection with this subject another case is related which, from its painful interest, as well as from its value as a warning, we proceed to extract. "A melancholy instance of the effect of terror happened, a few years ago, in the north of England. A lady had gone out to pay an evening visit, at which she was expected to stay late. The servants took advantage of the absence of the family to have a party at the house. The

nurse maid, in order to have enjoyment without being disturbed by a little girl who was entrusted to her care, and who would not remain in bed by herself, determined to frighten her into being quiet. For this purpose she dressed up a figure and placed it at the foot of the bed and told the child if she moved or cried it would get her. In the course of the evening the mother's mind became so forcibly impressed that something was wrong at home, that she could not remain without going to ascertain if any thing extraordinary had occurred. She found all the servants dancing and in great glee; and on inquiring for the child, was told that she was in bed. She ran up stairs and found the figure at the foot of the bed, where it was placed by the servant, and her child with its eyes intently fixed upon it, but, to her inexpressible horror, quite dead."

Mortified pride, disappointed love, and jealousy are the last of the moral causes enumerated. These, like the others, are illustrated by cases which have occurred within the observation of the author.

At the head of the causes in the second class, or those which act upon the brain by sympathy, are placed the disorders of the chylopoietic viscera. In these cases, a train of hypochondriacal symptoms exists before the patient is absolutely insane.

It is frequently difficult to determine which was the original disease, that of the brain or that of the chylopoietic viscera. Many cases of insanity have originated, apparently, from sympathy with diseased lungs. In many instances, however, as in the case just mentioned, it is extremely difficult to ascertain which of the two was the original lesion. This form of mental disease appears to be connected with hereditary predisposition.

Exposure to cold is frequently the determining causes of insanity in those who are predisposed to encephalic disease. To this cause, connected with poverty and an indifferent diet, much of the insanity of agricultural labourers owes its origin. Repelled eruptions and the suppression of secretions and of evacuations, both natural and accidental, are the causes next illustrated. Gestation and parturition follow. Two cases, produced by the former, are reported. "After delivery," the author remarks, "insanity more frequently arises from the brain sympathising with the uterus, from the stopping of the lochia, or from its sympathising with the breasts, from cold or any other cause interrupting the secretion of the milk."

In persons once afflicted with puerperal insanity, relapses are frequent during subsequent pregnancy. This may be prevented by proper treatment. Fevers, whether sthenic or asthenic, are productive of insanity, the former by too great determination of blood to the brain, the latter from weakness of that organ. The following distinction between insanity and the mere delirium sometimes attendant upon fevers, is not without a practical bearing. "In delirium from fever there is a total derangement of all the intellectual faculties. The powers of perception suffer, no less than the reasoning and affective; the language of the patient is confused, and, generally, an unintelligible mass of words without any definite meaning. Now, in insanity, it never happens that all the intellectual faculties are at the same time disordered, except when the patient becomes delirious from fever, to which he is, of course, as liable as those who are sane. The insane possess a knowledge of the objects around them, and a power of reasoning, although incorrectly: whilst, in delirium, volition and even con-

sciousness seem to be suspended. We may also be certain that when the disordered action of the brain has continued some time after the fever which caused it has ceased, and the pulse is natural, whatever else may be the symptoms, the patient is insane and not delirious."

After asserting that all kinds of vice have a tendency to debilitate the whole system, and hence, as the brain is affected in common with the other organs to produce insanity, the author thus proceeds: "But there is a vice, the secret and unsuspected indulgence of which seems, in addition to its weakening the general powers, to have a specific and direct tendency, in many constitutions at least, to operate upon the brain and nervous system." And, in a note appended to the work, he farther observes, "Masturbation, the cause alluded to, is a fertile source of insanity. I have no hesitation in saying that in a very large number of patients in all public asylums, the disease may be attributed to that cause. 'The general debility which is produced by this disgusting habit, is more severely felt in the brain and nervous system in some constitutions than in others, and whilst a pale face, general lassitude, drowsiness, cold extremities, trembling hands, and a voracious appetite, are the indications of its existence in one, the brain is the first part to give way in another, and insanity takes place. We must not, however, omit to mention that the practice is often the consequence as well as the cause of the disease.'"

We observe that in the last report of Dr. Woodward, Superintendent of the Massachusetts State Lunatic Hospital, the practice above alluded to is stated to have been the cause of 81 of the 855 cases which had been received into that institution up to the close of the year 1838. If such be the case, and a corresponding proportion of the patients in other institutions of a similar character, have brought the fearful malady of insanity upon themselves by an indulgence in the same pernicious habit, it is a subject that certainly merits the attention of every writer upon the disease, as well as that of all who are either directly or indirectly interested. We know of no other treatise upon insanity which contains so great an amount of useful information in regard to this specific subject, as that which we have under consideration. An Appendix of several pages is exclusively devoted to it. From this we make some extracts: "Unhappily it (the practice in question) has not hitherto been exhibited in the awful light in which it deserves to be shown. A great deal has been said on *dementia* by previous writers on insanity, but this, the true cause of its origin, in by far the greater number of cases, has not been mentioned. It is often begun in very early youth. I have had under my care a child almost in a state of fatuity from this cause, at ten years of age, but who subsequently recovered; and I have recently been informed, on authority the accuracy of which I cannot doubt, of similar effects being produced by the same causes, in a child not more than eight years old. In the present artificial state of society, where marriages are too frequently prevented only from the want of what are considered sufficient pecuniary means, and where scenes of dissipation are prevalent, and a highly stimulating and exciting mode of living is adopted, this vice, as it might be expected, is unfortunately continued in after-life." * * * *

"When in Paris, I accidentally met a French Surgeon, Mons. A. Gerente, who then resided in the Palais Royal No. 36; he informed me that he had discovered an effectual mechanical preventive. * * * I have recently been

informed that he has been in London, and that his contrivance is valuable; when I saw him he had not one made, and I understood from him that, in order to be of any use, they must be fitted for the particular person intended to wear them. If the patient is alive to the deplorable consequences already caused by the practice, and to those still worse which are to follow from its continuance, so as to be induced to abstain from it, he may generally be restored. To assist his good resolution he ought, on going to bed every night, to have his hands secured. He should sleep upon a hard mattress, without curtains, and the room should be particularly dry. Cold ablutions about the genitals and loins should be constantly applied, and he should take exercise in the open air: the diet should be nutritious, and the bowels should be kept moderately open by cooling aperients; but the tincture of cantharides is the most effectual cure. I have long been in the habit of giving this medicine, in doses of from 20 to 30 drops, three times a day, increasing or diminishing them, according to their effect."

Inebriety is stated to be a frequent cause of sympathetic insanity. Some, it is true, become insane by the irritation and excitement of the brain itself, but others, from sympathy with the disorders of the chylopoietic viscera, engendered by the intemperate use of intoxicating liquors. Delirium tremens is often the precursor of insanity. The excessive use of opium is followed by similar effects, as that of spirituous liquors. Inanity, or long abstinence from food, is mentioned as a cause of mental derangement. Gout and dropsy, it is observed by the author, are named as such by other writers. No cases of the kind have come within his observation. He has seen many cases in which dropsy has supervened upon the mental disorder. We would suggest the probability that, in all these cases where the two diseases exist, contemporaneously, so far from either being produced by the other, they both owe their origin to an identical cause. It is a well established truth, that any disease which presents a considerable obstacle to the portal circulation, may induce ascites. According to our author, insanity may spring from the same cause. We believe the probability to be much greater that they both have their origin in it, than that one of them is induced by the other.

Symptoms of Insanity. To enter into the minutiae of detail in this subject were to penetrate the devious windings of a labyrinth, the termination of which could never be reached. The author of the work before us, as consistency required, has based his remarks on the symptoms of the disease, upon the theory which he endeavours to maintain. We abridge from his work. In cases of *organic lesion* of the brain, the first symptoms are, a confusion of the intellectual faculties, obtuseness of the senses, embarrassment in speaking, and difficulty of articulation. The lesion increasing, a torpor of the limbs, and an indisposition to muscular exertion supervene. The circulation is languid: there is great congestion of the vessels of the extremities; the feet and legs, generally the most affected in this respect, are cold, purple, and often oedematous. Emaciation and death ensue.

Arising from slow, spontaneous inflammation of the brain or its meninges, insanity is generally preceded by severe and continued pain in some part of the encephalon, this pain being increased by mental exertion. The ideas are transient and disconnected, there is no power of controlling the thoughts, the senses are sometimes very acute, particularly that of audition. The disease fairly established, its symptoms are those of moral insanity.

In moral insanity, the first abnormal indication, in a great proportion of cases, is abstraction of mind. The duties of life are neglected, abstraction is so great that the patient is with difficulty aroused to a consciousness, and very soon relapses; the mind dwells upon subjects diverse from those addressed to the senses. Seized at this juncture the disease may be arrested, as is illustrated by a case of threatened relapse, in which leeches to the temples, the head shaved and kept cool by cloths dipped in cold water, warm pediluvia, and a cathartic of calomel and extract of colocynth, produced relief. These were followed by rhubarb, soda and ginger, in small doses, three times a day, during two weeks, when the patient had entirely recovered.

Insanity arising from joy or success, displays itself in vivacity of demeanor, continued talking and extravagant expressions of hope. Occasioned by sympathy with the chylipoietic viscera, the premonitory symptoms are dyspesia and hypochondriasis. The disease being established, the symptoms vary according to the character and temperament of the patient. A constant suspicion and an aversion to nearest and most intimate friends, are the most frequent. Religious delusions, imaginary subjection to the power of witches, the supposition of venereal disease in themselves, exalted ideas of their own importance and abilities, and a suicidal propensity are among the other symptoms under which these deluded patients suffer. Many cases of suicide arise from the brain sympathising with the liver, when that organ is diseased. A tendency to suicide has frequently commenced in the last stages of consumption, in those cases in which insanity and phthisis pulmonalis alternate with each other. A singular expression of countenance, particularly in the eye, which has been mentioned by authors as existing in those patients prone to suicide, is accounted for by the fact that the muscles of expression indicate, to a certain extent, the feelings of the heart. Hanging has been the mode by which most of the suicidal patients at Wakefield and Hanwell have attempted self-destruction. Much thought and consideration are said to have been generally bestowed upon the manner in which they should consummate their intentions; and cases are related to show that if they have once decided upon a particular method, it is improbable that they will adopt any other. Suicides sometimes appear to occur from the impulse of the moment, no previous propensity to the deed having existed. The character of patients, in regard to their passions and propensities, frequently undergoes a great change after the invasion of insanity. The amiable become vicious, mischievous, violent, and the modest, immodest.

Irregularity of secretions, in the early stages of mental alienation, is mentioned as the principal physical indication of the disease. But in cases where the abnormal action of the cerebro-spinal system has been severe, bodily weakness and disease are always present. The temperature of the head is very frequently higher than that of any other part of the body, and, accompanying this, there is generally, but not invariably, a thickened pulse. The extremities are generally cold. In many cases there is a cold, clammy, fetid perspiration which makes the body appear as if rubbed with grease. This varies in the same patient and is most apparent during a paroxysm. Dr. Ellis recollects no instance of the recovery of a patient who had this symptom. The tepid bath very much destroys the unpleasant fetor.

Extreme hunger and obtuseness of nervous sensibility are frequent symptoms of insanity. Intense visceral disease has, in some cases, existed, without manifestation during life. The sensibility of the nerves of the special senses is sometimes very much diminished, at others as greatly augmented.

Idiocy and Fatuity.—In treating of these, the author makes the same distinction that Prichard and some others have made, in restricting the term "idiocy" "to those cases where the deficiency of understanding is congenital." "I make this distinction," he observes, "because many patients, during attacks of insanity, exhibit appearances so closely resembling idiocy, that they are often considered incurable and allowed to sink without an effort being made for their recovery. But no case, however apparently desperate, unless connate, will justify the neglect of the most strenuous exertions. Several cases under my care have recovered, where the patients have, on their admission, exhibited a total deprivation of all the mental faculties." Two interesting cases of this description are reported, but they are too long for insertion here.

Idiocy arises from the brain being "defective in size and power," or "from a brain of natural size having some organic disease or mal-formation." "Idiots are frequently subject to epilepsy," and, according to the experience of the author, "they are not long-lived."

Fatuity is traced to three causes, viz: long-continued, over-exciting cerebral action; "weakness arising from excessive general bleedings and evacuations in cases of mania," and "masturbation." The last is said to be "by far the most usual cause."

Treatment.—In the introduction to the chapter upon treatment, the author declares the impossibility of prescribing a method which might be applicable to all cases. Diversity of constitution renders a variation of practice essential, even when the causes and the symptoms are identical.

Insanity being a disease of the cerebro-spinal system, the author divides its subjects, in reference to treatment, into two classes: 1st, those "whose diseased action only is going on in the brain;" and, 2d, those in whom "the continuance of the diseased action has produced diseased organization." The former state he calls "incipient," and the latter "chronic" insanity. Cure, or "much relief," can be effected in those cases alone which belong to the former class. He objects to the customary division into "mania and melancholia," because these "are but symptoms and results of over-exercise of different mental faculties; and they are alike attended by excess of sanguineous circulation in the brain." He concludes that the disease, excepting those cases which result from a loss of blood, defective nutrition, or other debilitating causes, invariably commences with this excess of circulation, and, from its continuance, an organic lesion of the brain and its meninges, and effusion of serum in the ventricles and beneath the membranes, eventually take place. Fatuity and death he believes frequently to result from too copious venesection, with the intention of obviating the determination of blood to the brain, and without an endeavour to remove the cause of that determination. The treatment in the latter respect depends upon the nature, either physical or moral, of the primary cause.

Incipient insanity, attended with excess of sanguiferous circulation in the encephalon, is divided into, 1st, "Cases where it is produced by a direct physical injury, or by some sudden increase of general sanguiferous cir-

culation, arising from a temporary cause;" 2d, "Cases where the brain is principally affected by the action of some moral cause;" and, 3d, "Cases where the insanity is caused by the brain sympathising with some other disordered organ." Those cases arising from an "inadequate supply of blood to the brain," are next treated upon. These include such as are the result of masturbation, which diminishes the flow of blood in the cerebrum and increases it in the cerebellum. The treatment of chronic insanity is subsequently discussed.

Insanity arising from Blows on the Head, Coup de Soleil, &c.—The symptoms being "an altered manner in the conduct or sentiments, a wildness of expression, irritability of manner, foul tongue, costive bowels, a quickened pulse and sleepless nights," he recommends depletion. "Copious bleeding from the temporal artery, free purging with calomel and extract of colocynth, and cold applications to the shaved head, are the most to be depended upon," with nitrate of potassa in ten grain doses, nausea by tartar-emetie, and heat, or even mustard poultices, if necessary, to the feet. The patient's apartment is to be well ventilated, and noise and light excluded. Inflammatory action continuing, local bleeding and digitalis, with nitrate of potassa, may be directed. But the author observes that he has seen "serious consequences" result from the injudicious use of digitalis, and that "from five to ten drops [of the tincture?] repeated three or four times a day, is as much as we ever begin with." If, after this treatment, the debility is such as to prevent the healthy process of digestion, he recommends bitters, stimulating tonics, and exercise in the open air. Finally, a cure by these means not having been effected, the further treatment is identical with that of moral insanity. A case arising from pressure upon the brain is here reported, which, being of so interesting a nature, we shall present a brief abstract of it.

A seaman fell from the yard-arm of one of the British naval vessels, which was, at the time, in the Mediterranean. He was picked up insensible, a short time afterwards, placed in a hospital at Gibraltar where he remained several months, and was thence carried to England. During the whole of this period he lay upon his back, his respiration continued, and his pulse was sensible; he could move his lips slightly, when desirous of food or drink, and his fingers exhibited a constant automatic motion isochronous with the pulsations of the heart. There was no indication of volition, sensation, or the use of the intellectual faculties, the motion of the lips being undoubtedly a phenomenon of organic life, caused by sympathy with the stomach. In this state the patient was sent to St. George's Hospital, and, a depression upon the cranium being discovered, he was trephined, and the depressed portion of bone elevated. The motion of his fingers, still corresponding with the pulse, continued during the operation, but that being completed, immediately ceased. Three hours afterwards the patient raised himself upon his pillow and sat up in the bed. Being asked if he felt any pain, he pointed to his head. In four days he began to converse, and could get out of bed. He had been perfectly insensible during a period of more than thirteen months. He remembered being pressed on board the ship in which he was at the time of the accident, but of every thing that had occurred between that time and the day of the operation, he retained not the slightest recollection.

Diseased action of the brain resulting from long exposure to heat and to the rays of the sun, without actual *coup de soleil*, is to be treated in

the same manner as if this latter effect were actually produced. Sir W Ellis has seen no advantage accrue from the application of blisters to the head. "They appear rather to create irritation than to allay it." Ice, or cold water, "has often the most salutary and instantaneous effect."

Protracted intoxication produces the only cases of insanity which are attributed to an excess of sanguiferous circulation, the result of a "temporary cause." If the patient be strong, his system not debilitated by long intemperance, the same treatment as in the foregoing cases is recommended. If active mania exist, confinement will be necessary. A pair of wide canvass sleeves, connected by a broad shoulder-strap, and the parts covering the hands made of leather, are preferred to the strait-jacket for securing the arms. For the feet, a couple of leathern straps, lined with wool, placed around the ankles and secured to the bed by staples, are recommended. An arm-chair, each arm being a padded box, and a board passing between the two, in front of the patient, is a convenient mode of confining the body.

Moral Insanity.—The treatment of this disease is divided into medical and moral. It is observed that "in all cases of insanity arising from moral causes, on the commencement of the diseased action of the brain, more or less disorder will be found to exist in some of the other bodily functions." It may be in those of one of the abdominal viscera, and, in this case, the mode of treatment is to be such as is usual for the same visceral complaint under ordinary circumstances. To diminish the circulation in the brain, great depletion is deprecated, on the ground that the brain, or some portion of it, being continually over-excited, such general depletion will not withdraw the proper proportion of blood from that organ. It is proposed to shave the head, and practise topical bleeding upon the scalp directly beneath which the excess of circulation is going on. If one spot be more painful or indicate a higher temperature than any other, the bleeding should be practised there. "In many cases," says the author, "where the insanity has been clearly confined to particular propensities, I have found a greater degree of heat in the scalp covering that region of the brain which phrenologists have assigned as the organs of such propensities, than in other parts of the scalp." And, by a species of inductive reasoning, with the assistance of arguments drawn from analogy, the treatment of other cases is arrived at. "In other cases, therefore," says the author, "where the patient is silent, if I find from the conduct that a certain set of feelings and propensities is deranged, I apply leeches or cupping-glasses to the region pointed out by phrenologists as their organs." And this treatment "has been very generally successful." In many chronic cases, also, relief has been obtained from local depletion applied on the same principles.

After the topical bleeding there should be refrigeration by cold applications, of which ice is the best. The shower bath, which is used by some, is thought not to be so beneficial as a continued application of cold. The feet are to be kept warm, and mustard poultices applied, if necessary. To allay irritation, prevent watchfulness, or induce sleep, exercise and cold applications to the shaved head have been found useful. So also has the extract of hyoscyamus, or the tincture of digitalis; the former in doses of five grains, and the latter in doses of from fifteen to twenty drops. Opium is said to be "rarely admissible in insanity," from the fact of its producing heat and febrile action.

We believe the truth of this assertion to be disproved by the treatment pursued in some of the lunatic Asylums of this country, where, if we mistake not, opiates are administered with very considerable freedom. The following draught, according to Sir W. Ellis, has proved beneficial. *R. Misturæ camphoræ ʒi; liq. ammoniac. acetatis ʒij; tinct. digitalis m̄xv; tinct. hyoscyami ʒss; syr. balsami ʒj. Misce.* The warm bath, however, is the most generally productive of a happy result. If the stomach be foul, give an emetic. If the bowels be torpid, and the urine diminished or anormal, give purgatives in small, and, if necessary, increasing doses. Croton oil, in portions of from one to two drops, at intervals of six hours, may be necessary in order to produce free evacuations. To increase the renal secretion or diminish the circulation, the following recipe has been found useful. *R. tinct. digitalis; tinct. scillæ āāʒss; vin. antim. tart.; spir. aether. nitr. āāʒj. Misce.* Administer in dose of thirty drops, three or four times a day, in conjunction with ten grains of nitre. If the skin be hot and dry and the secretions deficient, give "five grain doses of nitre with a quarter or an eighth of a grain of tartar emetic." If the bile be insufficiently secreted, the following may be used as a substitute for the last. *R. pulvis antimonalis gr. ij; hydrargyri sub-mur. gr. ss. Misce.* It is acknowledged that the above method of treating the irritability of incipient insanity is "slow and uncertain." And the author has "very little doubt that there is in nature, some medicine, with which" he is "at present unacquainted, that would operate as a specific in these cases."

Moral Treatment.—To remove the exciting cause of the disease is the first indication. Inasmuch as the method of effecting this depends upon the nature of the cause, the proper means of accomplishing it must be left to be decided upon by the person who has charge of the patient. An attempt should be made to interrupt the train of thought, and everything tending to recall painful associations or reflections should be avoided. The patient should be surrounded by new objects and removed from the society of his friends. His attention should be drawn to proper amusements and to manual labor.

It is unessential, nay, it would be superfluous, for us to enter into a detail of the minutiae of moral treatment, recommended by the author whose work we have under consideration. The whole fabric of this part of his treatment is based upon the same ground, indeed, it is identical in all its principal parts, with that of most of our Lunatic Asylums. He considers it best that the patients should be placed at institutions devoted to the cure of mental disorders, and says that, in the government of them, their tastes and habits are the lever, and frequently the only lever, by which the moral man can be moved." "So important," he continues, "do I consider the diverting the mind by employment, that, when the patient cannot be induced thus to occupy himself, or where the occupation is too mechanical to keep the mind interested, I do not hesitate, with proper precautions to entrust him with tools, even where an inclination to suicide or to violence exists. And although I have adopted this plan in numbers of cases, no accident has yet ensued, and it has frequently been the means of the patient's complete recovery." For persons in the higher classes of society, he says "A mansion should be provided, with a park, woods, lawns, hot-houses, gardens, and green-houses. It should be fitted internally with every convenience and luxury for the gratification of the taste. Science and the fine arts ought to be pressed into the service of

stimulating the dormant faculties to healthy exercise." He proceeds to recommend a music-room, a weekly "dress-concert or oratorio," lectures on chemistry with practical experiments, an orrery, a modelling room and a studio, the study of botany—various animals and birds both wild and domestic, and a good but judiciously selected library. Indeed, he would make such an asylum an almost complete college, and he says, "I should not consider that an asylum for the rich had attained the highest point of moral management, until it had become so happy a place of residence that the patients, when restored, should regret the quitting it, unless drawn from it by ties of family and affection." Unfortunately for the welfare of the insane, institutions so nearly perfect will probably, for the present, like the "châteaux en espagne" of the visionary enthusiast, be found only in the fairy land of imagination.

Insanity from Sympathy.—If the disease originate in a disorder of the chylipoietic viscera, the secretions of those organs must be restored by the customary means. Profuse venesection is rarely admissible, and, in the commencement, neither violent medicines nor large doses should be administered. In other respects, the treatment is to be nearly the same as if the patient were sane. If there be pain or unnatural heat in the head, cold applications and local depletion may be employed, but with care. If the disease arise from suppressed natural evacuations, these must be restored; if from the stoppage of accidental discharges, they must be reproduced. In young and healthy persons, whose insanity has been occasioned by intemperance, the head must be kept cool, the blood diverted to the extremities, the bowels kept open, and the irritation allayed by effervescing draughts and sulphate of magnesia in small doses. A mild tonic should be administered after the incipient stage has passed off. When the patient is aged, or has been long intemperate, some stimulus is required. Brandy has been used with benefit.

Puerperal insanity seldom occurs, previous to delivery, if the secretions of the abdominal viscera continue in their normal condition. A morbid state of these, together with sympathy between the uterus and brain, is recognised as the cause of the disease. It is generally attended by some inflammatory action, and hence requires depletion and other antiphlogistic remedies. These are to be used with caution. When insanity supervenes after parturition, the lacteals and other seerning organs are defective in action and must be restored. "The warm bath, diaphoretics, gentle aperients, camphor mixture combined with tincture of digitalis or tincture of hyoscyamus, is often very useful in procuring sleep, but shaving the head and perseverance in the application of cold, are the best means of lessening the irritability in this, as in every stage of acute insanity." If the disease be produced by excessive hemorrhage, tonics, a mild but nutritious diet, and moderate exercise in the open air, are the proper means of treatment. The bowels should be kept open, and all excitement avoided. A tendency to suicide and an indifference on the part of parents towards their children characterise this form of insanity; and hence a watch should be maintained over the former, and the latter removed beyond their power.

Insanity in which the Brain receives an Insufficient Quantity of Blood. If this form of the disease arise from inanition, the bowels are torpid and the pulse feeble, accompanied by general languor. The bodily vigour must be restored, and a nutritious, but not a stimulating, diet resorted to. The head must be kept cool, and, if it be hot, topical bleeding practised upon it. Arising from hemorrhages, the disease is treated in a similar manner

to that from the same cause mentioned under the head of puerperal insanity.

Chronic Insanity.—Although, in cases of organic lesion of the brain, a complete restoration of the cerebral functions to a normal state is impossible, yet, where that lesion is very light, the change produced by it is so trifling that the patient "is capable of managing his affairs;" and, if freed from excitement, may exhibit no indications of insanity for a considerable period. There will always remain, however, a liability to a recurrence of the disease, and such attacks in some patients occur periodically, being induced by very slight causes. By a judicious diet, they may be much delayed. An approaching paroxysm is indicated by heat of the head, vitiated secretions, nervous irritability, and a change of conduct. Quietude, small local bleedings; and the other remedies mentioned in the treatment of incipient insanity, are the proper means of medication, all, however, to be directed with greater caution than in the former case. The early direction of local depletion is very highly commended. In the intervals between the paroxysms, a judicious moral treatment is necessary.

Several pages are devoted to a discussion of the importance of medical students studying insanity. The study of phrenology is recommended as a useful auxiliary. Besides being of indirect benefit, according to the opinion of the author, by "helping us to a more accurate acquaintance with the state of the patient, it may be applied, directly, to most valuable purposes." One instance of its use has already been detailed. I could mention others, where the mere examination of the head, without any previous knowledge or information whatever as to the habits of the patient, has suggested the propriety of a particular course of moral treatment which subsequent events have fully proved to be correct." The instance alluded to above of advantage derived from phrenology, is mentioned in an earlier part of the work. After having remarked upon the importance of ascertaining the "ruling passion" of the patient, the author relates a case in which that passion was discovered to be "a love of gain." "In this instance," says he, "phrenology was of practical use. The existence of the strong feeling of love of gain was ascertained, solely by the observation of the head at the time."

Whilst we are willing to admit that a knowledge of phrenology may be beneficial to those who are devoted to the management of the insane, still, in its present imperfect state, it appears to us impossible that, to the generality of persons, it could be of so eminent practical utility as is supposed by our author.

Mr. E. objects to patients being permitted to see their friends. "In numerous instances," he says, "patients who were apparently recovering very speedily, have been thrown back nearly into the same state as on admission, merely from seeing their friends."

Apoplexy, Epilepsy, and the Diseases of the Insane.—Apoplexy is considered "to be a variety of that disease of the brain and nervous system which produces insanity in one person, epilepsy in another and convulsions in a third," rather "than a frequent direct cause of insanity itself."

Insanity succeeding apoplexy is nearly always fatal, the ingredients losing their vitality and extensive sloughings taking place. Produced by epilepsy, the disease is but little less incurable. Seams, blisters, emetics, cathartics, venesection, sedatives, mercury and numerous other means of treatment which have been resorted to, have been attended, in the author's

experience, by no beneficial effect, when the "seat of disease appeared in the head." Strict diet, the avoiding of mental irritation, and the keeping of the bowels soluble, will often diminish the frequency and the violence of the paroxysm. If the epilepsy arise from teething, worms, or other sources of abdominal irritation, the removal of the cause will effect its cure. Other diseases by which the insane, in common with people in general, may be attacked, are to be treated as if there were no mental alienation, excepting that the remedies, especially depletion and the vegetable poisons, should be employed with greater caution.

The Construction of Asylums and their Mode of Management.—A long chapter is devoted to this, which may be consulted with advantage by all those who are interested in the subject.

The distinction between Conduct which is the result of Moral Evil and that which arises from Insanity.—The substance of the author's remarks under this head, so far as they are applicable in practice, is contained in one or two sentences. He observes that, by some people, "even where no physical disease exists, acts are committed so entirely opposite to the feelings of a good and virtuous man, that he is unable to account for them, and he attributes them, from kind but mistaken views, to insanity. But such acts differ, essentially, from those which arise from mental derangement; *they are not the result of any morbid action in the brain, or nervous system, or of any diseased organisation there; and they are entirely optional.*" * * * * "I cannot think that any act, however vicious or eccentric, ought to be considered as the result of insanity, *unless it is involuntary and arising from some disease in the brain and nervous system.*"

In the tenth and last chapter of his work, the author discusses the question "how far the circumstances which produce it (insanity) are either directly or remotely under our control?" He examines the several causes in succession, and, from his observations thereupon, we glean that, in order to abstract ourselves as much as possible from the liability to mental derangement, we must avoid exposure to the sun with the head uncovered, cultivate presence of mind, wherewith to be able to prevent accidents or to mitigate their consequences, observe "that commandment which bids us not to make haste to be rich," temper our grief and curb our ambition, avoid the gratification of the senses, manage the constitution judiciously, have the mind imbued with right motives, and place a proper estimate upon the things of life. "These things are to be taught to our children, and, we may add, "to our children's children even unto the seventh generation." There is much pertinence in the author's remarks upon these subjects, but we fear that, in the present state of society in the enlightened world, they will be unproductive of much lasting benefit. For the accumulation of wealth, and for the "gratification of the senses," people will probably continue, as they heretofore have done, to put in jeopardy not only their reason but also their lives.

P. E.

BIBLIOGRAPHICAL NOTICES.

ART. XVI. *An Inquiry concerning the Diseases and Functions of the Brain, the Spinal Cord, and the Nerves.* By AMARIAH BRIGHAM, M. D. 12mo., pp. 327. New York, 1840.

THE object and plan of the present work are, to adopt the language of the author, "to call the attention of those practitioners of medicine into whose hands it falls, to the importance of the nervous system, and to persuade them to embrace every opportunity that is presented for studying its functions and diseases.

"For this purpose," the author remarks, "I have endeavoured to give a partial summary of what is now known respecting this system. I have collected a large number of cases explanatory of its diseases and functions—cases that are scattered through many volumes; to which I have added a considerable number that have fallen under my own observation; and have thus sought to indicate the way that this system should be studied in order to increase our knowledge of its functions and our means of remedying its diseases.

"In the second part, I have briefly treated of a number of diseases, the pathology of which is not yet settled. I have not sought to give full accounts of these, but to direct attention to a few important circumstances, and such as require further investigation."

The general plan of the work is a good one, and it has been very successfully carried out. It presents a tolerably accurate though somewhat hasty sketch of the present state of physiological knowledge in relation to the brain and nervous system, illustrated by a number of judiciously selected cases of disease affecting various portions of the brain, spinal cord, and nerves, and which are, at the same time, well adapted to elucidate the leading outlines of the pathology of the nervous system. This division of Dr. B.'s inquiry might, it is true, have been digested with a little more care, and those particulars connected with the physiology of the nervous system that are to be considered as fully established more clearly distinguished from such as are as yet merely conjectural, or which require for their elucidation further observations. One or two errors, which it is unnecessary here to particularise, have been admitted, and we notice a few omissions, more especially in reference to the structure of the nervous fasciculi—the nature of their primitive fibres, and the positive absence of any anastomosis or connection between them—the structure of the sympathetic nerve, &c., a knowledge of the facts in relation to which are essential to a correct understanding of the pathology of a large and important class of diseases.

A reference to the admirable summary given by Professor Müller of the physiology of the nervous system, would have furnished Dr. Brigham with many useful hints, as well in relation to the materials as to the arrangement of his Inquiry.

The second part of the Inquiry contains a very brief but at the same time interesting account of the principal diseases that have their seat in the brain and other parts of the nervous system. The only fault of this division of the work is its extreme conciseness.

We can with great confidence recommend the work of Dr. Brigham to the favourable notice of the profession. The practitioner, in common with the student, will find it a convenient and very useful manual of the physiology and pathology of the nervous system.

If it should be the means of inducing "but a few to investigate the affections of this system with care—to record and make known the facts they observe, and thus add something to our knowledge of its functions and diseases," as the author hopes it may, it will prove a much more useful work than are many of those already published on the same subject, although of far higher pretensions.

D. F. C.

ART. XVII. *New Remedies: the Method of Preparing and Administering them; their Effects on the Healthy and Diseased Economy, &c.* By ROBLEY DUNGLISON, M. D., M. A. P. S., Prof. of Inst. Med. and Mat. Med. in Jeff. Med. Coll. of Philada., &c., &c., &c. Philadelphia, 1839. Lea & Blanchard. 8vo. pp. 503.

THERE is manifestly no acquisition more essential to the practitioner, than a thorough acquaintance with the properties of the various remedial agents which he employs—their effects on the animal economy in health and disease, and the best method of administering them, so as to secure the effects we desire. Every attempt to assist the physician in the attainment of such knowledge is entitled to favour, and such, we are persuaded, will be the reception of the volume just prepared by Dr. Dunglison. The aim of the author is "to enable the profession to form an accurate estimate of the value of remedies of more recent introduction, or of the older remedies whose use has been revived under novel applications." These remedies are arranged alphabetically—their synonyms are first given—next the best methods of preparing them—then their effects on the economy in health and disease, according to the experiments and observations of various practitioners and experimenters—and, finally, formulae for the most approved methods of administering them.

The following article, extracted at random, furnishes a fair example of the plan of the work, and the manner in which it is executed:

"FULIGO.

"SYNONYMES.—Fuligo Splendens, F. Ligni, Soot, Woodsoot.

"*French*.—Suie.

"*German*.—Glanzruss, Spiegelnuss, Kaminruss, Ofenruss, Russ.

"The discovery of creosote, and its extensive application to the treatment of disease, gave occasion to the resuscitation of this article—much employed by the ancients, but subsequently fallen into oblivion.

"The older physicians frequently used soot as an exciting, diaphoretic agent in cachexia of every kind, in chronic rheumatism, cutaneous affections, and especially in the evil results of their sudden repercussion; in glandular indurations, rickets, exostoses, &c. It has also been employed as a domestic remedy in colic, and in the simple and dysenteric diarrhoea, and cholera of children. Several modern recommendations—as by Schütte and Weisenberg—remained unheeded until the attention of physicians was recently drawn to it, especially by Blaud.* He is of opinion, that the costliness—and by no means easily prepared—creosote may be wholly replaced by soot. Both are products of the dry distillation of organic substances; their odours are analogous, and as soot is much cheaper and more easily obtained, it deserves, he thinks, to be tried more extensively in therapeutics. The soot has a nauseously empyreumatic, more or less bitter and acrid, saline taste.

"EFFECTS ON THE ECONOMY.—Blaud† has exhibited the soot in different diseases, especially in the form of ointment, or in decoction, with excellent and

* *Revue Médicale*, Juin, 1834, et Janvier, 1835, and Dr. E. Gräfe, in *Gräfe und Walther's Journal*, xxiii. 310. Berlin, 1835.

† *Journal des Connaissances Médico-Chirurg.*, Mai, 1834.

rapid effects, in herpes, itch, tinea, gutta rosacea, and pruritus vulvæ; and he asserts, that he even healed a cancer of the breast by frequent ablution with a tepid decoction of it, and an ointment composed of equal parts of lard and soot with one-eighth part of the extract of belladonna; but the same applications were of no benefit in a case of cancer of the nose, and in one of cancer of the uterus. He also cured a scabby eruption of the mucous membrane of the nose by an ointment of soot. In diphtheritis, he used, in two cases, a decoction of soot as a mouth-wash with the best effects.

In confirmation of Bland's remarks, Voisin asserts, that he cured a case of cancer of the face by the soot ointment.

Dr. J. R. Marinus* has found it very efficacious in chronic eruptions (dar-tres), and in tinea.

Carron du Villards† advises a collyrium prepared from soot in cases of stru-mous ophthalmia. He infuses two ounces of soot in boiling water, filters and evaporates to dryness; the shining residuum is then infused in very strong boiling vinegar, and to every twelve ounces of the liquid, twenty-four grains of ex-tract of roses are added. A few drops of this solution, in a glass of tepid water, form an excellent resolute collyrium, which may be made stronger or weaker at pleasure. He has, also, in cases of spots on the cornea, used soot—either blown into the eye alone, or mixed with powdered sugar-candy, and has seen good effects from it. United with butter it forms an eyesalve, not inferior, he says, perhaps to any other. As, in the treatment of specks on the cornea by dropping laudanum into the eye, the organ quickly becomes accustomed to it, Carron du Villards advises, that the eye should be excited to a more lively ac-tion by means of the combination of soot and tincture of opium given below. It is, he says, an energetic agent and may be applied by means of a pencil to the granulations of the cornea. He likewise recommends a decoction of soot as an injection in discharges which are the consequence of chronic inflamma-tion of the vagina.

More recently, M. André Gibrin,‡ has detailed to the Académie Royale de Médecine of Paris, six cases of chronic inflammation of the bladder in which soot was beneficially used in the way of injection. He took from the chimney two ounces of compact soot, broke it up, washed it, and boiled it in a pound of water. The decoction was filtered through paper, and injected into the bladder twice a day. The good effects supervened so closely on the administration of the remedy, that there could be no doubt as to the cause. The pain ceased, and the patient obtained sleep, to which he had been for some time a stranger. The urine gradually became clear, and recovered its natural appearance.

To these remarks it may be added, that, according to Schütte, an ointment composed of two parts of fresh butter or hog's lard, and one part of soot, is a popular and efficacious remedy on the Rhine for cases of porrigo, itch, and her-pes; not more than a dram [drachm] being rubbed in at a time. Wetsenberg ascribes to the soot a protective power against contagious affections of the skin, and recommends, especially, lotions of soot water—partly as a preventive agent, and partly as a therapeutical application in itch.

But the soot has not been used, of late, externally only; its internal use, in the form of the old "tincture of soot," has been revived. This was long known under the name of "soot drops" and "fit drops," and was employed as an anti-spasmodic in hysterical and other affections; but its employment has been ex-tended, and it is given in chronic rheumatism, chronic affections of the chest, suppressed cutaneous eruptions, in many cases under precisely the same notions that prevailed years ago. From thirty to sixty drops of the following tincture are given several times in the course of the day.

* Bulletin Médical. Belge, Nov. 1838, p. 289.

† Gazette Médicale, Janvier, 1831; see, also, Baudelocque, on its use in Scrofulous Ophthalmia, in Bulletin Général de Thérapeutique. Mars, 1834.

‡ Bulletin de l'Académie, 15 Mars, 1837.

"MODE OF ADMINISTERING.—*Mistura Fuliginis*.—*Tinctura Fuliginis* (Clanderi).—Mixture of Soot.

R. Fulig. splend. ℥ss.
Potassæ carbonat. ℥iiss.
Ammonis carb. ℥ij.
Aq. sambuc. ℥ix.

Digere leni calore. Filtra.

Dose.—From thirty to sixty drops several times a day.

Lotio Fuliginis.—Lotion of Soot.

R. Fulig. splend. manip. maj. ij.

Coque cum aq. font. lbj per semihoram. Cola cum expressione.

Used as a wash, several times a day, in herpetic, psoric and syphilitic ulcers.

BLAUD.

Unguentum Fuliginis.—Ointment of Soot.

R. Fulig. splend.

Adipis, aa. ℥ss.

Extract. belladon. ℥j. M. exactè,

To be spread upon lint or tents in cases of cancers.

BLAUD.

R. Axung. porcin.

Fulig. splendent. aa. ℥ij.

Coque leni igne per horas vj.

As a dressing in cases of tinea, and of foul ulcers.

BLAUD.

R. Carbon. pulv.

Sulph. depur. aa. ℥j.

Fulig. splend.

Cort. Peruv. flav. aa. ℥ss.

Cerati simplicis q. s. ut fiat unguentum.

A drachm to be rubbed in, once or twice a day, in cases of tinea.

CARRON DU VILLARDS.

R. Opli, ℥ij.

Caryoph. arom. ℥j.

Fulig. splend. loti, ℥ss.

Aq. cinnam. ℥viiij.

Alcoholis, ℥iv.

Digest in a gentle heat for six days; filter and express the residuum.

Applied in cases of specks on the cornea.

CARRON DU VILLARDS.

R. Fulig. ℥ij.

Album. ovi, No. vj.

Tere simul.

As a dressing for herpes and tinea. It is the *Pommade résolvative* of Saint Marie.*

R. Fulig. ℥iiss.

Zinci sulphat. ℥vj.

Adipis, ℥iv. M.

Applied in cases of tinea. It is the *Pommade contre la teigne*, of Bories.†

We recommend this very useful compilation to the attention of students and practitioners.

* Nouveau Formulaire Médical et Pharmaceutique. Paris et Lyon, 1820.

† Formulaire de Montpellier. Montpellier, 1822.

ART. XVIII. *System der Physiologie umfassend das allgemeine der Physiologie, die Physiologische Geschichte der Menschheit, die des Menschen und die der einzelnen organischen Systeme im Menschen, für Naturforscher und Aerzte bearbeitet. Von Dr. CARL GUSTAV CARUS, &c., 3 vols. 8vo, pp. 372—460. Dresden, 1838, and 1839.*

A System of Physiology, embracing General Physiology, the Physiological History of Man, and of his individual organs, for the use of Naturalists and Physicians. By Dr. C. G. CARUS.

It would be impossible to give to our readers a correct idea of the physiological doctrines advanced in the two volumes before us, without presenting a critical analysis of the greater portion of their contents. Such an analysis would, however, occupy more space than we can well appropriate to a work so essentially theoretical in its character. Dr. Carus has attempted to construct from the comparatively scanty materials at his disposal, a complete system of Biology as the foundation of general as well as special physiology. To the theories advanced by the author we are willing to concede the praise of ingenuity, and, so far as relates to the general facts and observations upon which these theories are based, he has certainly exhibited commendable industry in their collection and sufficient accuracy in their detail. On most of the points connected with the general doctrines of physiology, his observations, it is true, are particularly interesting, while many of his views, if they cannot be received as fully established, are at least deserving of attention in consequence of their very great plausibility. Dr. Carus has, nevertheless, so intimately blended, in relation to almost every subject of which he treats, fact and hypothesis, established truths and bold assumptions, as to vitiate, in a great measure, all his leading deductions. His entire system of Physiology can, in fact, be viewed in no other light than as a splendid hypothesis, highly plausible, we confess, in many of its parts, but in others wanting even this recommendation.

The time has not yet arrived when any attempt at the formation of a complete "System of Physiology" can be expected to be successful. On many important points connected with the functions of the living organism, our knowledge is at best imperfect, while in relation to many others we must confess our entire ignorance; it is even probable that many of what are now considered fully established physiological facts, will be shown by future observations and discoveries to be errors, or, at least, to be so essentially modified as to render inaccurate whatever system may be attempted to be based upon them. It is only by the accumulation of facts, and the further verification of those we already possess by judiciously conducted observations and experiments, that the promotion of physiology to the rank of an exact science can be effected.

While the scientific reader may derive from the work of Dr. Carus many useful hints, we cannot recommend it to the student of physiology, convinced that it would be rather calculated to mislead him than to convey to him any positive instruction.

D. F. C.

ART. XIX. *Wenken en Meeningen omtrent Geneeskundige Staatsregeling en Algemeene Geneeskunde, onder medewerking van eenige Vaderlandische verzameld en Uitgegeend door J. P. HEIJZE, Practiserend Geneesheer te Amsterdam. Jahrbuch der Gesammten Staatsarzneikunde. Herausgegeben von Dr. C. F. L. WILDBERG, Grosseherzoglich, Mecklenburg-Strel Ober-Medicinalrath.*

BOTH these Journals are devoted, the first chiefly and the second exclusively, to Medical Jurisprudence and Public Hygiene.

That edited by Dr. Heijze, which, besides the several subjects connected with legal medicine, embraces in its plan the ordinary topics of a Medical Journal, is published at Amsterdam, and was commenced in March, 1838; only the first four numbers have been received by us.

Of the Annals of Legal Medicine by Dr. Wildberg, published at Leipzig, five volumes have already appeared.

Both works exhibit a very considerable amount of talent on the part of their respective editors and contributors, and, by the dissemination of facts connected with the important subjects to which they are devoted, they cannot fail to do much good in directing the attention of the profession to the study and improvement of every branch of legal medicine.

The leading articles of both journals are replete with interest, without, however, presenting much novelty either in reference to their subjects or the manner in which they are treated—many of them are of a strictly local character.

Among the more important contents of the four numbers of Dr. Heije's Journal may be enumerated:—

On the Influence of Schools on the Health of Children; by the Editor; a very sensible paper, comprising many excellent hints for the improvement of the physical discipline of schools and the arrangement of the periods of study.

On the Legal Provisions in relation to Diseases of the Mind; by the Editor. After pointing out the regulations in relation to the Insane of the French Government, and commenting upon their policy and beneficial tendency, Dr. H. computes that eight hospitals, each adapted for the reception of three hundred insane patients, will be required in Holland. In Friesland there is, according to the editor, one insane to every 2739 of its inhabitants, and in Overijssel one to every 899.

On the Examination of Persons adapted to serve as Recruits and Substitutes in the National Militia, by the Editor; containing some useful hints on simulated diseases.

On the Plague and Quarantines, by Dr. Bussemaker.

Two Medico Legal Investigations in Cases of Accusation for Infanticide.

A Review of Schröder v. d. Kolk's Report on the neglect of the proper means for the Alleviation of the Condition and for the Cure of the Insane in Holland; an interesting paper, though the remarks it embraces are of an almost exclusively local character.

There were treated in the Insane Hospital at Utrecht, between the years 1832 and 1837, 317 patients, of whom 88 were cured.

On Premature Interments and houses for the reception of the dead previous to interment; a paper containing many important suggestions.

On Vaccination, Varioloid, &c., by Dr. Arntzenius. The writer is a strong advocate for vaccination. He believes it to be in all cases when fully performed an effectual preventive against small pox. When it fails to protect the system from an attack of the latter, he believes this to arise either occasionally from some peculiarity of constitution in the patient, or more generally from the neglect of the physician, in consequence of which the system has not been placed fully under the influence of the vaccine virus, and from vaccination being frequently performed by individuals wholly ignorant of the distinctive characters of the genuine affection. Dr. A. considers it probable that when, after vaccination, an herpetic eruption or scrofulous symptoms occur, the predisposition to an attack of small pox may not be fully extinguished. He urges revaccination after ten or fifteen years in all cases in which there is any doubt as to the full protection of the system by the previous vaccination.

A Review of Dr. Boech's Treatise on Indian aphthæ, (*aphthæ orientales*.) The author denominates the disease a phlegmasia of the mucous membrane of the stomach and lungs. The common aphthæ he considers to be a strictly exanthematous disease. He proposes for the cure of the Indian aphthæ, gentle laxatives with frictions of mercurial ointment over the epigastrium in the commencement, and, at a later period, small doses of sulphuric acid and tonics, particularly the lichen Islandicus, and externally leeches and frictions with a solution of tartar emetic.

In the Annals of Dr. Wildberg, the papers deserving of particular notice are the following:—

On the necessity of an assiduous attention on the part of the state to the

suppression of prostitution and unchastity and the means adapted to that end; by the Editor.

Dr. W., after noticing the increase of prostitution and unchastity which has taken place of late years, and the baneful influence which these vices exert not only on the individuals addicted to them, but upon society at large, proceeds to consider the causes to which their increase is to be attributed, under the following heads:—

1. The entire ignorance in which the youth of all classes of society are left, in relation to the structure and functions of the human body, and, consequently, of what is necessary for its health and well being.

2. The defective education of children, both moral and physical.

3. The neglect of children, on the part of their parents and instructors, during their hours of relaxation and school holidays.

4. The intimate intercourse of children of different classes of society.

5, 6. The excessive luxury of the present day, and the prevailing taste for pleasure and dissipation.

7. The great extent to which the perusal of love tales and other improper works is promoted by the numerous circulating libraries and reading rooms, and, in consequence, the powerful excitement afforded to the imagination and sensual appetites in early life.

8. The disregard in which marriage is held, and the obstacles thrown in the way of its early contraction.

9. The want of respect for the moral character of men, and the tolerating, excusing and holding in equal estimation those of dissolute lives and characters.

10. The neglect of clergymen in not enforcing the moral obligations opposed to prostitution and unchastity.

11. The neglect on the part of the public authorities of those measures which are calculated to prevent and suppress these vices.

The means proposed by the writer for the diminution and extinction of prostitution and unchastity may be inferred from the above enumeration of the causes to which he refers its promotion and increase.

Two excellent papers occur in the third Number from the pen of the Editor; the first, on the causes which induce so many mothers to give up the suckling of their infants, and the injury which these incur from hired nurses; and the second, on self-destruction from intemperance in the use of ardent spirits.

Advocate Bopp, of Darmstadt, presents a very interesting contribution towards the history of legal medicine.

The various details presented in the communications respecting the legal regulations of the Grand-Duchy of Hessa to prevent the too early interment of the dead; the provisions of the Duchy of Nassau and of the Arch-Duchy of Hessa in relation to legal medicine; and the legal provisions of the latter Duchy in regard to the medical attendance of the poor; will be read with great profit and pleasure by all who are interested in the subject of public hygiene and medical jurisprudence.

From the general summary of intelligence appended to each Number of the *Annals*, we select the following statistics:—

In St. Petersburg, there were born in the year 1838, 11,120 children; the deaths the same year amounted to 11,711—giving an excess of deaths of 591.

In Moscow, there were born in the year 1838, 9152 children, and there died 7967 persons—giving an excess of births of 1185.

In the city of Posen, with a population of 36,468, there were born in the year 1838, 1388 children, and there died 960 individuals—giving an excess of births of 428.

In the City and Parish of Elberfeld, with a population of 35,411, there were born in 1838, 1736 children, viz: 865 boys, 861 girls—68 of which were illegitimate. Twins occurred 14 times, and 97 children were dead born. There died the same year 1192, viz: 639 men and 553 women—the oldest of whom was 99 years, 3 months—excess of births this year 535.

In the City and Suburbs of Rostock, there were born in 1838, 567, viz: 273

boys and 294 girls—72 of whom were illegitimate. There died 463—243 males 220 females—excess of births 104. Married this year 137 couple.

In the City and Suburbs of Vienna, there were born in 1838, 16,296 children, and there died 14,393 individuals—excess of births 1903; 3067 of the deaths were from diseases of the lungs, 1972 from consumption, and 100 from small pox.

In Berlin, with a population of 280,000, there were born in 1838, 9429, viz: 4925 boys and 4504 girls; of whom 1896, viz: 676 boys and 620 girls were illegitimate. There were 107 cases of twins and 1 of triplets. The deaths this year amounted to 8649—excess of births 780. Of the illegitimate children 789 died. The suicides amounted to 78—2753 couple were married.

In the Grand-Duchy of Mecklenberg-Schwerin, with a population of 482,692, there were born in 1838, 18,125 children, of whom 944 were either dead born or died previous to baptism, and 2400 were illegitimate. There died this year 9819—excess of births 8306. The suicides amounted to 54; 3690 couple were married. Of the deaths, there were 1209 of persons over 70—423 of persons over 80—60 of persons over 90, and 3 of persons over 100.

In the Grand-Duchy of Mecklenberg Sirelitz, in the year 1838—in the Duchy of Strelitz, there were born 2403, namely. 1258 boys and 1155 girls—273 of whom were illegitimate; 24 cases were twins. There died 1630, namely, 862 men and 767 women—between 80 and 90, 65—between 90 and 100, 8; suicides 11; married 584 couple. In the Principality of Ratzeburg, there were born 539 children, of whom 55 were illegitimate—10 cases were twins; there died 323; married 145 couple. In the whole of the Grand-Duchy, the births exceeded the deaths by 989.

In Frankfort on the Maine, there were born in 1838, 1176 children, including 56 dead born—there died 1178—giving an excess of deaths of 2; 311 couple were married.

D. F. C.

ART. XX. *Annual Report of the Interments in the City and County of New York for the year 1839, with Accompanying Remarks.* By WILLIAM A. WALTERS, City Inspector. New York.

THIS is an interesting statistical document. In the construction of the tables, the author has followed with some slight alteration the excellent plan introduced by his predecessor, Dr. DUNNELL, noticed on a former occasion, (No. for August, 1839, p. 429.) These tables, Dr. Walters states, are as accurate as possible, consistent with the requirements of existing statistics; but that to furnish exact returns, the bills of mortality should be drawn, not from the number of interments, but rather from the actual number of deaths occurring in the city. No proper estimate of deaths in proportion to the population, he adds, can be given, until we are furnished, first, with a register of births; and, secondly, with the new census of the city and county, now in course of preparation.

The following remarks of Dr. Walters furnish a synopsis of the principal points of interest.

"The whole number of interments within the city during the year ending December 31st, 1839, were 7953; being 100 less than for the year preceding.

"Of these, 7491 were from among our white population, and 462 were coloured persons.

"Of the whole number, 4389 were males and 3564 females. This excess of mortality among the male population, as already stated in the reports of interments for previous years, is not easily explained, and is probably much greater than the proportion of male over female residents.

"The disparity commences during fetal existence, as is shown in the table of still-born infants, and continues almost through every period of life.

"The average mortality among our foreign population appears to be much

greater than among our native citizens. Of the whole number of deaths in persons over ten years of age, 1419 were natives and 1853 were Europeans.

"The season of the year most fatal to human life in this city, as shown by the tables, is during the months of July, August and September. The season, on the contrary, in which the fewest deaths occur, is during the three months immediately preceding these, namely, April, May, and June.

"The great mortality in this city among the children under five years of age, has long been the subject of remark. During the past year, excluding the still-born, more than half the deaths, or 3696, occurred in children before the completion of their fifth year. The disease most fatal within this period of existence are, marasmus, inflammation of the brain, whooping cough, measles, scarlet fever, dysentery, diarrhoea, cholera infantum, croup, convulsions, dropsy of the brain, and teething.

"The mortality from pulmonary diseases, including in this list all the disorders of the respiratory organs, is nearly equal to one-third of the whole number of interments.

"The deaths from pulmonary consumption alone, during the past year, were 1315, being an increase of 90 over the year preceding.

"The mortality from pulmonary consumption in this city may be rated at one-sixth of all the deaths; but the average varies greatly among the different classes. It is worthy of remark, that of those over ten years of age, that die of this disease, more than one-half are natives of Europe. Of the 5564 deaths among our native white citizens, only 610, or about one in nine, occurred from consumption. Of the 463 deaths among our coloured population, 132, or one in three and a half, occurred from this disease. And of the 1853 deaths among our European population, 563, or about one in three and a quarter, occurred from the same disease.

"The city has been visited by no fatal epidemic during the past year; and, with the exception of measles, the various contagious diseases have been less prevalent than formerly.

"The tables show 68 deaths from small pox. The proportion of these that had previously undergone vaccination cannot be ascertained; but as 39 of them, or more than one-half, were among children under five years of age, the probability is, that very few of the whole number had resorted to the only efficient means of protection against this loathsome and fatal malady."

ART. XXI. *De la Durée de la vie Humaine.* Par le Docteur BELLEFROID, à Hasselt. Bulletin Médicale Belge. Aug. et Nov. 1839.
On the Duration of Human Life. By Dr. BELLEFROID, of Hasselt. Brussels: 1839.

THE mean duration of human life, and the agencies by which this is either shortened or prolonged, afford some of the most interesting objects of inquiry to the investigator of medical statistics. Much light has of late years been shed upon the subject, and the results obtained by numerous inquirers are to be met with in the pages of our Journal. It affords us pleasure to subjoin others obtained by a new author, as these present some novel facts, and at the same time serve to correct or confirm the estimates of others. For the methods pursued in calculating the mean or average duration of life, we must refer to the writings of Halley, Deparcieux, Malthus, Corboux, Finlayson and Caspar. The following comprise some of the interesting facts furnished in Dr. Bellefroid's article.

Duration of Generations.—It is generally considered that a generation lasts from 30 to 33 years, and that three generations are comprised in an age or century. This opinion seems to have been confirmed by recent researches made at Paris by M. Villot, keeper of the Archives of France, from which it results that the duration of generations among the male sex has been very nearly 33½ years in

the superior class of Parisians, who have preserved records or other means of establishing the point. The duration of a virile generation is, however, estimated by M. Villot to comprise the period between the birth of the father and the birth of his first son, a mode of making the estimate Dr. Bellefroid very justly pronounces improper, although it is in accordance with the common opinion.

"The most general principle which we can establish upon this subject," observes Dr. B., "is, that the number which expresses the mean duration of life of any people, expresses also the length of its generations. For, suppose the inhabitants of a country have, counting from their birth, a mean duration of life of 30 years, this would indicate that after thirty years these inhabitants will all have disappeared and be replaced by a new generation, which, in its turn, would remain 30 years, and that this succession would continue the same until the occurrence of some circumstance calculated to alter the cypher expressing the mean duration of human life. In Belgium, the duration of generations corresponds exactly with the mean of human life, both being 30 years. In our country, the whole number of deaths per annum amounts to 109,188 (in 1835 and 1836), making 279 each day and 11.63 per hour. Dr. Caspar, who has had the patience to make a similar calculation for the whole earth, has estimated the total population at 960,000,000, and the mean duration of life at 33 years. From these data, the last of which is unquestionably too high, he computes that 29,000,000 die every year, 80,000 every day, about 3300 per hour, and 55 per minute.

In regard to the influence of sex upon the duration of life, Dr. B.'s investigations confirm those made by so many others who have shown that females have generally the advantage of males from birth to a very advanced period of life, though the difference in favour of the females is greatest in the first year of existence. In Belgium, however, the advantage which death seems to allow the fair sex, does not extend to all classes of society. With females living in large towns, the chances of life exceed those for males at all ages from birth to the seventieth year. The ratio of this excess is eight years at the time of birth, and never less than three up to the sixtieth year. It is, however, far otherwise with regard to the probabilities of life in the country, where the ratio of mortality of females remains constantly below that of the males from the age of twenty to the latest periods of life. This, it must be remarked, is the case in the rural portions of Belgium, and the remark applies with equal force to Germany, Switzerland, and all other countries where cupidity forces females to engage in those laborious pursuits which are suited only to the greater strength and ruggedness of the male sex.

With regard to the dangers incurred by females at what is termed the critical age of forty-five, Dr. B.'s researches seem to confirm those of Benoiston and others, who have investigated this subject, all of whom have shown that in Paris, St. Petersburg, Berlin, and perhaps all other places, the ratio of mortality at that age is really greater for males than females!

In adverting to the causes which operate in favour of females, Dr. B. refers to that of the greater size of the male at birth. He, however, ridicules the idea put forth by Joseph Clarke, that the results of the mechanical difficulties to which males are subject at birth, when they do not prove fatal at once, continue to exert an unhappy effect upon them to the last days of their lives. Almost every one who has attempted to explain the cause of the greater mortality of males than females, have ascribed it mainly to the greater exposure of the males to accidents of various kinds, and to fatiguing and exhausting labours. These external causes, although they doubtless exert some effect, will not suffice to account for all the disparity which subsists between the rates of mortality of the sexes, and our author, therefore, believes with Dr. Caspar, that the main cause of the greater longevity of females is to be sought for in their physical organization, which exposes males to greater danger from acute diseases. This fact we demonstrated, we believe, for the first time, in the pages of this Journal several years ago, as may be seen by referring to the No. for Nov. 1835, p. 56.

Dr. Bellefroid gives, in his third section, some very interesting facts to show the agencies exerted by marriage and fecundity upon the probabilities of life. Hufeland and Déparcieux were the first authors who affirmed that celibacy had the effect to shorten life. The demonstration was however made by Dr. Odier, whose calculations show that a girl of twenty years has the chance of living increased ten years by marrying, and that up to the ninetieth year, the existence of married women and widows is much more secure than that of spinsters. Dr. B's computations not only confirm the results of Dr. Odier but make the probability of life of a girl who marries at twenty, eleven years greater than that of the single woman, a privilege enjoyed throughout the latest periods of life.

The advantages thus conferred by matrimony, in prolonging the period of existence, are not confined to the female sex, but singular as it may seem, are enjoyed to a greater degree by men, as will appear from the following extract from our author:

"We have calculated the chances of life of married and single men, by the mortuary lists made by Déparcieux from the records of St. Sulpice, and although the date of these is somewhat distant they serve to confirm in a great degree the results we have obtained from other data. It is shown by these that the probabilities of life of married men exceed those of the single by nineteen years, at twenty years of age, and that at all periods of life, the married man preserves a decided advantage of longevity. The difference between the probable chances of life is therefore much greater between married and single men, than between married and single women. The table of Dr. Casper coincides perfectly with our own calculations upon this point, showing, that at every age, from that of pubescence to the cessation of the catamenia, married females enjoy a longer and more secure life than the single. But it proves at the same time, that the advantage accruing to females from marriage is not near so great as that afforded to men: for whilst from the ages of twenty to thirty the mortality of husbands is to that of bachelors about as one to twelve, that of wives to spinsters is only in the population of one to six during the same period of life. The number of spinsters who live to be seventy years old, is only 16 per cent, whilst that of married women is 34 per cent. This difference, without being so great as that existing between married men and bachelors of the same age, nevertheless confirms what we have stated in relation to the happy influence exerted by marriage upon the latter period of life."

The disparity observed in the proportional mortality of married men and women, is to be chiefly ascribed to the perils of child-birth.

Influence of Professions and Occupations upon the Duration of Life.—Professor Caspar, of Berlin, has published the results of his investigations upon the influence exerted on the duration of life, by at least ten professions. Many highly interesting facts are developed by these researches, which, however, are confined to Germany, and to the present century. Dr. Bellefroid, in pursuing a similar train of investigation, has pushed his inquiries into every part of Europe, so as to show the effects or agencies exerted by differences in climate, manners and customs, upon large numbers distributed into particular professions and occupations. Nor are these inquiries confined to the present century, but extend back so as to embrace at least three centuries.

In distributing the various subjects of his observations into the respective classes, and forming what he terms his *social scale*, Dr. Bellefroid notes down all individuals who have obtained reputation by an exertion of talent, excepting popes, such persons as have died by violence, and those whose ages have not been satisfactorily determined. He places in his 1st class, kings, queens and reigning princes; 2, ministers, ambassadors, governors, &c., comprising those in the highest employments; 3, Catholic priests; 4, Protestant, Lutheran, Calvinist, English and other clergymen; 5, poets, that is to say, all those authors the works of whom are rather the products of the imagination than of the reason and the memory, such as authors of romances, dramas, &c.; 6, artists, comprehending painters, sculptors, engravers, architects, musicians and actors; 7, savans, comprising those who meditate, or compile, such as mathematicians, che-

mists, natural philosophers, grammarians, historians, &c.; 8, professors of universities and colleges not comprehended in the preceding classes; 9, the military, for the most part superior officers; 10, medical men, subdivided into, 1st, such as are exclusively devoted to practice, and 2d, those who devote themselves chiefly to the literature of the profession, or to teaching; 11, blue-stockings, (*bas-bleus*) comprehending literary ladies, female artists, actresses, &c.; 12, cultivators, or farmers and gardeners; 13, merchants; 14, lawyers; 15, persons in subaltern employments. (The calculations for the four last classes are adopted from Dr. Caspar.) Finally, mendicants, that is to say, such of the poor as receive aid from charitable institutions, from which class all under twenty-five years are excluded.

Dr. B. observes that it might have been advantageous to make more numerous distinctions, especially in the class of artists, since it is ascertained that painters are not so long-lived as sculptors, which last are exceeded in longevity by engravers and architects. Having, however, completed his original plan, it was not convenient for him to alter it. It will be seen that most of his inquiries appertain to classes of individuals pursuing the less laborious employments. With regard to the rate of mortality among those engaged in the more laborious pursuits, it may be remarked, that, as a general rule, it is in direct proportion to the violence of the labour, exposure and privation experienced.

As to the *professions* which have been the particular subjects of Dr. B.'s investigations, the average duration of life in each is as follows:

Catholic priests, 68.8 years; Protestant ministers, 65.6.

The mean duration of life with savans and professors taken together, is 62.1, and if the different nations be distinguished, they would stand as follows:

German savans and professors,	-	-	-	-	-	59.9 years.
Italian	"	"	-	-	-	61.3 "
Dutch	"	"	-	-	-	61.8 "
English	"	"	-	-	-	62.8 "
Belgic	"	"	-	-	-	63.7 "
French	"	"	-	-	-	64.6 "

The average duration of life with female artists, blue-stockings, &c., has been 61.4 years.

Physicians devoted to the literature of their profession have lived, on an average, 62.4 years; and when those of different nations are distinguished, they stand as follows:

Those of Holland and Belgium,	-	-	-	-	-	58.6 years.
Germany,	-	-	-	-	-	59.5 "
France,	-	-	-	-	-	62.3 "
Italy,	-	-	-	-	-	62.6 "
England,	-	-	-	-	-	64.1 "

With practising physicians the mean duration of life has been much shorter, namely, 58.4 years.

Those of Germany have averaged	-	-	-	-	-	55.7 years.
France	"	"	-	-	-	59.5 "
Italy	"	"	-	-	-	58.4 "
England	"	"	-	-	-	60.3 "

The average duration of life with poets and artists, has been 58.2 years.

When the different classes and professions are viewed in regard to longevity, the results are as follows:

Of kings, but 13 out of 100, attain to 70 years of age, whilst, at that period of life, there survive 46 Catholic priests, 41 savans, 37 protestant ministers and farmers. At the same epoch of life there only exist 21 objects of charity, 26 practising physicians, 29 advocates, 30 poets and monastics, and 32 artists, out of every 100—whilst there are 36 of the military profession, 35 persons in the higher employments, 34 theoretical physicians, and 33 professors and store-keepers.

"The general consequences resulting from these estimates are," Dr. B. observes, "easy to comprehend. Kings are short-lived because luxury excites, ambition depraves, and pleasures exhaust them. Tossed alternately between the extremes of anxiety and immoderate pleasures, it is only in retirement that

they can enjoy that repose of mind and body which allows their time to flow like the more tranquil current of ordinary life," &c.

One might be somewhat astonished to see the military profession classed among the most favorable in regard to longevity, whilst lawyers do not live so long as either artists or poets. But this astonishment will cease when it is recollected that the list only includes superior officers, who are perhaps 30 years of age before they have attained an elevated rank. On the other hand, it is not uncommon to meet with lawyers at the age of 20, and almost all who join the profession do so by the time they are 25 years old, and this serves to explain, for the most part, the difference remarked in the longevity of the two professions.

Dr. Bellefroid concludes his inquiries upon this topic with the following remarks:—"To lead a life which is to endure, one must be neither king nor beggar, have enough to satisfy the wants of nature, and little that is superfluous. He must be regulated by the rules and precepts of piety, possess but little imagination, and, as a consequence, be but little troubled with the passions and vices. He must not be a physician. The receipt is infallible." G. E.

ART. XXII. *An Account of the Yellow Fever which appeared in the city of Galveston, Republic of Texas, in the autumn of 1839, with Cases and Dissections.* By ASHBEL SMITH, M. D., Ex-Surgeon General of the Texian Army. Galveston, 1839. 19mo. pp. 78.

THIS valuable and important contribution to our knowledge of Yellow Fever, in addition to the account of the disease given in our preceding No. (p. 499,) contains the results of the author's experience relative to its treatment, and the details of thirty-one cases, with the *post mortem* appearances in eight of them.

The histories of these cases place beyond doubt the fact of the disease having been the same as the yellow fever of the Havana, and the autopsies show that M. Louis is in error in supposing a peculiar discolouration of the liver (See this Journal, No. L. p. 384) to be an *invariable* anatomical character of the disease. Evidence to the same point might be adduced from other sources. It may be observed, however, that the character alluded to is one of very frequent occurrence.

The following case affords an exception to M. Louis's law.

We have not space for the history, except to state that the subject was a man aged about 45, who died on the commencement of the fifth day of the disease.

Autopsy, six hours after death. "Surface of an intense yellow, with livid patches about the hypochondria—fat—body not yet cold.—*Lungs* exhibit a little cadaveric infiltration.—*Heart* sound.

"*Abdomen*, all the organs still warm. The portal vessels are full of blood.

"*Liver* large, of a mahogany colour, contains in its substance a considerable quantity of darkish fluid blood. *Gall-bladder* small, not distended, destitute of bile, contains a small teaspoonful of mucous matter and several dark bottle green concretions, varying in size from the head of a pin to a large grain of wheat, and having the consistence and tenacity of Tripoli paste. Internal coat of the gall-bladder deeply injected and granulated. Biliary ducts are permeable and contain a small quantity of thin yellowish mucus.

"*Stomach* contains half a pint of black vomit—the flakes are abundant and very large. The mucous membrane surrounding the cardia is deeply and evenly injected to the extent of upwards of an inch in every direction—this tissue is here of the usual thickness and firmness, with a perfectly smooth surface; the colour is intermediate between venous and arterial red. The rest of the mucous coat is white, thickened and softened, and interspersed with bright red points and patches which are most abundant in the great cul-de-sac, and wholly wanting in that portion of the mucous coat immediately adjacent to the pylorus; the lesser cul-de-sac is the seat of several darkish brown patches, and the surface of the tissue is here studded with several papillæ, and rugose. The mucous coat is so much softened as to be nearly pulpy, particularly the portion investing the lesser cul-de-sac or antrum of the pylorus.—Dark flakes, the 'grounds' of black

vomit are adherent to all the middle surface between the cardiac and pyloric portions of the mucous coat.

"*Intestines*, viewed externally, are of a darkish colour in various portions of of the tract. This colour is seen to be owing, in some degree, to that of their contents. The *duodenum* is of a dirty grayish white, throughout its entire length—its mucous surface is covered with a starchy secretion, and presents several small patches of red injection; its minute glands are much developed. There exists a similar condition of the ilio-cæcal portion; the patches of Peyer are very prominent.—Considerable quantities of a dark gelatinous fluid with black flakes swimming in it, are found in different parts of the intestinal tube. The black flakes are confined to the superior portion of the tube and appear to have descended from the stomach.

"*Urinary Bladder* empty, contracted to a point.—*Pancreas, Spleen, Kidneys* present no traces of disease.

"A few of the dark bottle green concretions are found in the duodenum, where they appear to have been carried from the gall bladder by the violent efforts in vomiting. I regard them as biliary concretions, and not the product of the present disease. They do not resemble at all the matters of black vomit. The inspection of the liver and its appendages renders it clear that the black vomit could not have traversed the biliary ducts.—An inch or thereabouts distant from the middle of the great curvature of the stomach, the mucous membrane was deficient about one half of a line in diameter, as if a portion of it had been removed with a punch. I was not satisfied whether to regard it as an ulceration or not."

ART. XXIII. *Dictionnaire Historique de la Médecine Ancienne et Moderne, ou Précis de l'Histoire Générale, Technologique et Littéraire de la Médecine, suivi de la Bibliographie Médicale du dix Neuvième Siècle, et d'un Répertoire Bibliographique par ordre de Matières.* Par M. DEZEIMERIS, OLLIVIER (d'Angers) et RAGE-DE LORME, Docteurs en Médecine. Paris, 1828—1839. 4 vols. 8vo.

THE object of this work is to present "a concise history of medicine, and of each of its branches; a biography of every physician whose writings may still be consulted with advantage; the precise title of all his works, and an analysis of such as are distinguished by their importance or the singularity of their contents; and, finally, a table, or *real bibliography*, in which is pointed out, under the head of each subject, the authors who may be consulted relative to it."

That an enterprise of such magnitude and one requiring such immense labour and extensive and careful researches, has not been executed to the entire fulfilment of all that could be desired, will, we presume, be anticipated. Much, however, has been accomplished; enough indeed to excite our surprise and admiration. The assistance of M. Dezeimeris's colleagues ceased with the commencement of the letter E, and the whole of the remaining portion of the work has been accomplished by his unaided labours.

We have often had occasion to consult this work, during the progress of its publication, and always with profit, and we congratulate the student of medical literature upon its completion. He will find it to afford him essential assistance in his researches.

A *supplement* is promised, which is to comprise the materials collected too late for insertion in their proper places; and also extracts from the works which are merely indicated by their titles, so as to give what is original to the author or useful to be known.

We regret not to find any hopes held out, that the promised bibliography will be furnished. Those who are familiar with the new edition of the *Dictionnaire de Médecine*, the first fourteen volumes of which are greatly enriched by the labours of M. Dezeimeris in this department, know how competent he is for such a task; and will be the more anxious that he should include in his supplement a bibliography, inasmuch as the intermission of his contributions to the Dictionary has left a void which it is desirable should be filled.

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Two remarkable cases of complete absence of the Uterus.*—M. AD. BURGHEAIVE, Professor of Anatomy in the University of Ghent, has recorded in a recent number of the *Annales d'oculis, et de Gynécologie*, the two following remarkable instances of complete absence of the uterus which have come under his own observation.

In the *first case* the vulva had no vaginal orifice; the urinary meatus situated in the centre of this latter, and the contour of which had been ruptured in the act of copulation, readily permitted the introduction of the finger into a sac, the parietes of which were soft and membranous and which was easily recognised as the bladder. When a catheter was introduced into this sac and the finger into the rectum at the same time, it was evident that there existed no organ between the intestine and bladder that these were in immediate contact, as is the case in the male sex.

In the *second case*, the absence of the uterus was verified by post mortem examination. The subject of this was a woman 23 years of age who died, in the civil hospital of Ghent of Arachnoiditis. This woman was of a robust constitution and plethoric habit; her mammae were well developed; pelvis large; sexual parts well covered with hair. The vulva presented only a very large meatus, the circumference of which was irregular and furnished with numerous myrtiliform caruncles. This meatus led immediately into the bladder, and the relations of this last with the rectum were the same as in the first case. The ureters, instead of descending towards the base of the vesical triangle, opened immediately within and on the side of the urinary meatus, so that the bladder was situated behind these conduits. The orifices of the ureters were surrounded by sphincters which were capable of closing them and thus preventing the immediate flow of urine. Beyond these sphincters the ureters were very much dilated and this enlargement extended to the kidneys, so that during life these passages had performed the office of reservoirs. The genital apparatus consisted of two ovaries, well formed, situated in a fold of the peritoneum, and containing numerous ova, many of which were in a hydatid state. In the same peritoneal fold and immediately in front of the ovaries were the Fallopian tubes; these last had no canal, and were enveloped in a thick mass of erectile tissue. These tubes were joined behind the bladder without communicating one with the other.

Among the other structural peculiarities observed in this woman was the congenital absence of the velum palati; the isthmus of the fauces was bounded above by the free border of the os palati, upon which the pituitary and buccal membrane was directly reflected towards the tongue and pharynx to form the pillars. The left cerebral hemisphere was smaller than the right.

The subject of this remarkable case had never menstruated, and had manifested very marked venereal appetite.

The preceding cases with the one related by Dr. Chew in the original department of this Number, p. 39, constitute a valuable contribution to the history of congenital anomalies of the female genital organs.

3. *Experimental Researches on the Functions of the Brain.*—According to M. Nonat the lobes of the brain, the *corpus callosum*, the fornix, the *corpora striata*, the optic layers, the cerebellum, and the crura of the cerebrum, are not possessed of general sensibility, as evidenced by touch. In the lobe of the fourth ventricle, as was shown by MM. Magendie and Desmoulins, resides the faculty of the perception of general sensibility. Physiologists are wrong in placing the seat of sensibility in the cerebellum, as an animal from which the whole of the cerebellum has been removed retains the faculty of seeing, hearing, tasting, feeling, and smelling.

With regard to the influence of the cerebellum over the movements of progression or of standing, M. Nonat has arrived at the following results:

1. The lobes of the cerebrum direct the movements. Thus, when we wish to go from one place to another, it is by the action of the cerebral lobes that we are enabled to execute the movements necessary for this purpose. A rabbit deprived of the lobes of the brain executes the same movements as before; it is only weakened; but it can no longer avoid any obstacle, it cannot find its food; in short, it is deprived of that principle which formerly gave to all its movements a determinate direction.

2. The *corpora striata* regulate the movements backwards.

3. The *thalami optici* exercise a considerable influence on the actions necessary for standing; they furnish in a great measure the principle which supports the energy of muscular contraction.

4. The cerebellum directs the regularity of the forward movements; it appears to direct the movements of the lower extremities; and probably has also some influence on the equilibrium of the movements.

5. The circle formed by the cerebellum, its crura, and the transverse fibres of the cerebral protuberance regulates the movements of rotation around the axis of the animal.

6. The *tubercula quadrigemina* are necessary to the regular exercise of motion. Their lesion disturbs the harmony of the actions required for progression or for standing. This result agrees with that of M. Serres.

7. The lobe of the fourth ventricle contains a principle which overrules and regulates the respiratory movements, vomiting and crying. In this part of the encephalon resides a principle, in virtue of which an animal has the consciousness of tactile, and also of sonorous impressions.—*Ed. Med. and Surg. Journ. from Gazette Méd. de Paris*, 19th Oct. 1839.

3. Prof. SCHULTZ's *Experiments on Digestion.*—In our preceding No. (p. 429) we gave the results of these interesting experiments and in fulfilment of the promise then made we now furnish a narrative of the experiments themselves.

Exp. 1.—A dog of middling size, which for some time previously had been fed upon potatoes, received as much as he could eat of boiled, raw, and roasted horseflesh, in pieces of from half to one ounce in weight. He ate, in all, about a pound. After three hours he was killed; the digestion had, in the mean time made but little progress, and there was only a very small quantity of chyme collected at the pylorus. The pieces of boiled meat were every where at the surface, dissolved into chyme, and were strongly acid, even in the middle, and after being washed with water. The raw pieces were less dissolved, but had become of a livid hue; and were also less strongly acid at the surface, and in the middle not at all so. The roasted pieces were, even at the surface, not perceptibly altered; they were covered with acid chyme, but upon being washed with water, showed no further acidity. The alteration of the boiled and raw pieces increased gradually from the cardia to the pylorus; it was imperceptible at the cardia, and greatest at the pylorus. There was no difference between the pieces which lay at the parietes of the stomach, and those which lay in the centre. The stomach was firmly contracted about the food, and without any peristaltic motion.

Exp. 2.—A large dog, that had been fed with potatoes, received in the morning at 8 o'clock, from $\frac{1}{2}$ to $1\frac{1}{2}$ ounce pieces of boiled, raw and roasted horse-flesh; in all about $2\frac{1}{2}$ pounds. At three in the afternoon (after seven hours) he was killed. Although the digestion had proceeded so far that nearly two ounces of chyme were collected at the pylorus, yet the pieces of meat which lay at the cardia were still unchanged. The alteration increased gradually towards the pylorus, and here the pieces were about half dissolved, none being entirely so. The boiled meat was the most dissolved, and was most acid at its centre. The raw followed next; and by it the blue paper was reddened in the inside, as well as at the surface. The roasted pieces were also acid, even after being washed, but blue paper was scarcely altered by the inside. A peristaltic motion was present at the pylorus, which from time to time separated itself from the cardia, by the strong contraction of its circular fibres. The cardia was firmly contracted about the food, and without any perceptible motion. The thermometer stood in the stomach and chest at 32° Reaumur, and in the lower parts of the abdomen at 31° .

Exp. 3.—A dog of moderate size was fed with a soup made of potatoes, which was mixed with several large pieces, and a little tallow, with which the potatoes were boiled. Six hours after, the soup had disappeared from the stomach; the larger pieces were but little altered, and only somewhat rounded at the edges. There was besides a little chyme, mixed with a few fleshy fibres that were probably left from the last meal; it was strongly acid, but the pieces of potato were but slightly so at their surface, and not at all at their centre. The gall bladder was much distended, and contained $2\frac{1}{2}$ drachms of bile. Microscopic observations showed that the starch globules of the potato soup were still to be found unchanged, and in great number, in the intestines. The temperature of the stomach and chest was 32° Reaumur, of the liver and lower parts of the abdomen 31° .

The stomach, as it contained very little food, was much collapsed, and had a peristaltic motion in its whole extent, which, however, was strongest at the pylorus. This motion ceased after half an hour, and when I brought the two poles of the galvanic apparatus into contact with the stomach, strong contractions ensued; the separation of the pylorus from the cardia was particularly plain. I had laid bare the nervus vagus in the neck, and brought the two poles into contact with it, but after the spontaneous motion had ceased, no effect was produced in the stomach. On the other hand, as long as the peristaltic motion lasted it was greatly increased by the galvanic excitement of the nervus vagus.

Exp. 4.—A well fed dog, that would eat no vegetable food, was fed with 1 ounce of bread, 2 ounces of roasted veal, which was very tender, the same quantity of raw ham, and 4 ounces of boiled unsalted beef. He was killed nine hours after. Three-fourths of the food were dissolved to chyme. The boiled beef was entirely digested, and only to be recognised by a few fibres mixed with the chyme; the bread was half dissolved, and its remaining part, which was mostly crust, was, like the chyme, strongly acid, even in the middle part. One fourth of the raw ham had disappeared, and the other part, which was half fat did not appear to be at all altered, and was not acid after being washed with water. The roasted veal was little changed, and acid only at the surface, and not in the inside. The peristaltic motion was observed at the pylorus, but not at the fundus; the temperature of the chest and abdomen was $31\frac{1}{4}^{\circ}$ Rea.

Exp. 5.—A middling size dog which had fasted the day before, was fed with 6 oysters, 2 ounces of smoked salmon, 1 of salt herring, and two of boiled pork, mutton and unsalted beef. He was killed six hours after. The oysters were perfectly dissolved, except the closing muscle of one, and their parts no longer perceptible in the chyme. A third of the pork, and three fourths of the mutton and beef were dissolved; the acid of the last was the strongest. The pieces of salmon were still further divided, but not much digested; the herring was perfectly unchanged, and was acid only at the surface, and not in the inside.

Exp. 6.—Two half grown cats, that had fasted twelve hours, were fed at the same time with similar pieces of raw, boiled, and roasted veal; and further, with

boiled beef and fish, as much as they would eat. One of them was killed three hours after. The stomach was without motion, and firmly contracted about the food; the digestion had made but little progress, and about two drachms only of chyme were collected at the pylorus. The whole mass of the food had formed a ball, in which the different parts were not so easily recognised as in the dog, for cats tear and masticate their food, while dogs swallow theirs in large pieces. At the cardia, the surface of this ball was neutral, and the food was perfectly unchanged. In the middle, between the cardia and pylorus, blue litmus paper was somewhat reddened, and at the pylorus itself as strongly as usual, by chyme. The ball was cut through the middle with a knife, and it was seen that the degree of acidity was the same at the parietes of the stomach and in the inside of the mass. It increased here, also, towards the pylorus. The beef was the most digested and the boiled veal more than the raw; the fish and roasted veal, however, were still unaltered.

The second cat was killed after seven hours. The greatest part of the contents of the stomach were dissolved to chyme, and the stomach itself was three-fourths empty; the peristaltic motion, particularly at the pylorus, was also observed. A few pieces of fish were found among the undigested parts, the rest was mostly raw and roasted veal.

The temperature of the abdomen was 31° Reaumur, of the chest and stomach $31^{\circ}_{\frac{1}{2}}$ Reaumur.

Exp. 7.—A full-grown cat was fed with potato soup and a piece of old cheese and, after three hours, killed. The cheese was mostly digested, and its small remaining part was strongly acid, even in the inside. The potato-soup was little altered, and only rendered somewhat more fluid; it very slightly reddened with litmus paper.

Exp. 8.—A dog was fed with boiled, raw, and roasted veal, boiled fowl, fish a little boiled unsalted beef, and a piece of old cheese. He was killed four hours after. The cheese was entirely dissolved, and only to be recognised by the smell of the chyme. The boiled fowl was entirely, the beef and veal for the most part, digested, and their remains had fallen into small pieces. The raw veal was dissolved at its surface and its colour had become livid; it was acid at the surface, and neutral in the middle. The pieces of fish were still further divided, but it appeared to be merely through the mechanical motion of the stomach, for the muscular layers of fish were very loosely connected. The larger pieces, after washing, were but slightly acid; whereas the remains of the boiled beef were strongly acid even in the inside.

Exp. 9.—A cat was fed in the morning at nine o'clock, with flower and potato-soup, and further with a little carrot and boiled beef. It was killed at twelve o'clock. A piece of meat, which the animal had swallowed last, and which was found at the cardia in the midst of the soup, was still unchanged. The rest at the pylorus was quite dissolved; the soup was become somewhat more fluid and it was slightly acid; the carrot and a few pieces of potato were unaltered, and without acidity in the inside.

Remark.—I have often observed in dogs, that the order in which the different sorts of food are swallowed considerably alters the relative digestibility; for I have several times seen indigestible matter which was swallowed first, and therefore came first to the pylorus, digested before other food which was more easily digestible, but which being swallowed later, came later to the pylorus.

Exp. 10.—A dog of middle size which had been fed upon flour and potato soup, and afterwards allowed to fast 24 hours, was fed at nine o'clock in the morning with one or one and a half ounces of old cheese; two, the same quantity of Dutch cheese; three, the meat from the claws and tails of two large crabs; four, three ounces of roasted pork; five, an ounce of the fat of a smoked goose; and six, with four ounces of boiled unsalted beef. At half-past one he was killed; nearly one-half of the whole mass was changed into chyle; a pretty strong peristaltic motion was observed at the pylorus. I observed also an undulating motion along the course of the large curvature; the small curvature, however was perfectly motionless.

1. The boiled beef, of which a few small pieces were still visible, was dissolved. 2. The old cheese was entirely, and the Dutch cheese mostly, dissolved; its remaining part was chiefly rind, the surface and inside of which were strongly acid, even after washing with water. 3. The roasted pork was not much altered at the surface, although the inside was somewhat acid. The crab's flesh and goose fat were found in the chyme perfectly unchanged; the litmus paper, however, was slightly reddened at the surface of the crabs'-flesh after it was washed, but not in the inside. The fat, on the contrary, showed no acidity after being washed, even at the surface.

Exp. 11.—A distinguished individual of this city desired to know if it was true, as is generally believed, that oysters are more easily and quickly digested, if a little cheese be eaten at the same time. I was aware how difficult it would be to institute experiments upon this question upon dogs, for these animals, even after having fasted 24 hours, will never voluntarily devour oysters, so that they must always be given to them by force. However, I learnt, from Exp. 5, that when dogs have once swallowed oysters, they digest them very easily, and do not vomit them, as one would expect, after so much aversion. I therefore procured two dogs of the same size, and apparently of the same age. Both were allowed to fast 16 hours, so that in every respect they were nearly similar, except in colour, for the one was black and the other white. They were fed, or rather the food was forced down their throats, at eight o'clock in the morning. The white dog received eight oysters, and a small piece of bread; the black, eight oysters, a piece of bread, and about $1\frac{1}{2}$ oz. of cheese. At eleven o'clock or three hours after, both dogs were killed. In the white one, which had received oysters and bread only, I found $8\frac{1}{2}$ drachms of chyme of the usual quality together with four pieces of undigested oyster, which after washing with water weighed $4\frac{1}{2}$ drachms; the whole of the contents of the stomach, therefore, weighed 13 drachms. In the other, which had eaten cheese with the oysters, there were $13\frac{1}{2}$ drachms of very viscid chyme, and three small cartilaginous pieces of undigested oyster, which weighed 1 drachm 2 scruples; the weight, therefore, of the contents of the stomach of this dog were 14 drachms $1\frac{1}{2}$ scruple. The dog which had received the cheese had accordingly digested in the same time, and with the same number of oysters, 2 drachms 50 grains more than the one that had been fed with oysters and bread only. The chyme, also, in the stomach of the former, was much more acid than in that of the latter; upon this point my experiments upon the degrees of acidity in the alimentary canal may be consulted.

I now made some microscopic observations upon the manner of dissolution of the fleshy fibres in the stomach and intestines of the dog.

Exp. 12.—Raw meat obtains at the beginning of digestion a rough, ragged, appearance, which is particularly distinct under water. This raggedness is soon dissolved from the larger pieces, and may afterwards be found in the chyme. If a piece of the same be examined under the microscope, it is found that the muscular fibres do not separate from one another lengthwise, but remain together in large pieces. In fresh meat it may be seen, that the muscular fibres are articulated, and marked with fine transverse lines upon the spaces between the articulations. They are firmly connected at the sides, and are with difficulty separated from one another lengthwise. This connection remains during digestion, and the gradual solution takes place so, that the joints separate themselves into pieces which become gradually smaller, and in this condition fall apart lengthwise. At last, these pieces dissolve into very small globular bodies.

Boiled flesh is easily separated into fibres lengthwise; the articulations of the fibres and also the fine transverse lines, may be seen here, as well as in raw flesh: it is, however, more condensed, and the fibres are thinner, than in the raw condition, as may be seen in the fibres of boiled veal, when compared with raw veal. The first change which takes place in the boiled flesh of the mammalia in the stomach of the dog is, that the muscular fibres separate themselves from one another lengthwise. Roasted meat is not so easily separated into single fibres, and this, together with their greater hardness appears to be the reason why it is harder

to digest. In proportion as the fibres separate themselves in this manner lengthwise, they also fall into pieces transversely, and assume the appearance of having been cut with a sharp instrument. The pieces of muscle are also at first so sharpened edged, and for the most part remain so during their continuance in the stomach. In the duodenum, however, their edges become rounded, and the pieces appear to dissolve gradually, like a crystal in water, till at last a very small part only is left. The chyme in which they are found has a fine granular appearance.

The solution of boiled fish in the stomach of the cat takes place somewhat differently. The muscular fibres of fish are much larger than those of the mammalia and birds; they have also fewer articulations, and are more angular. They are strongly marked with longitudinal lines. These longitudinal lines are sometimes also to be seen in the muscular fibres of the mammalia; and, on the other hand, the transverse may be seen in the fibres of fish, though both cases happen but seldom. In the stomach of the cat, the fibres of fish separate themselves lengthwise from one another, and first appear with broken edges. The further solution, however, is quite peculiar. At first, large transverse fissures, which often go as far as the middle, arise at the sides, at which the fibres gradually fall into smaller pieces. The fibres now begin to dissolve at the end, and in the direction of the longitudinal lines, into sets of large globules, which gradually separate from one another, and in this condition may be afterwards found in the chyme.

Exp. 13.—After I had obtained from the manner of the solution of the mammalia fibres, a sign of the degree of perfection of the digestion, I wished to know whether the disturbance of the digestion, which I had experienced in myself from drinking coffee after meals, could be explained by experiments upon dogs. I therefore gave a dog a little coffee, with milk, directly after he had eaten several large pieces of meat. He was killed six hours after, and I found that the digestion had been delayed longer than usual; but in the manner of the solution of the muscular fibres, I perceived no remarkable difference. I now conjectured that the coffee was absorbed from the stomach, and that afterwards the digestion proceeded in its regular course. I therefore fed a dog with meat chopped very small, and gave him a little coffee, half an hour after. I killed him four hours after, and found that the greater part of the meat had gone over into the intestines, but little or not at all altered, and also that the unchanged fibres of meat, that could therefore have been little digested, were to be seen as far as the cæcum. In these the microscope could detect but few traces of solution although in general the fleshy fibres disappear entirely below the ilium.—*Lancet*, Nov. 16, 1829.

PATHOLOGICAL ANATOMY AND GENERAL PATHOLOGY.

4. *On Diuresis as a Revulsive action in Diseases of Infants.*—Dr. SIMON prefaces his remarks by alluding to the frequent inactivity, and sometimes the almost complete suspension, of the functions of the bowels and kidneys, while the system of the child is suffering severely from dentition. Whenever the intestinal or urinary excretion is much diminished, the febrile irritation of the system, it is well known, is invariably greater than usual; and if this state of things be permitted to continue without relief, there is much risk of alarming cerebral symptoms quickly making their appearance. The practitioner will therefore do well to pay particular and uniform attention to the condition of the bowels and kidneys in all diseases of infancy and childhood. The simple question as to the quantity and colour of the urine—and by the bye we can much better trust the report of nurses about the state of the urine than we can about that of the alvine evacuations—will often enable us at once to form a correct opinion as to the general or constitutional health of our patient. As long as the kidneys act freely, there is little or no risk in the symptoms of mere denti-

tion, however severe and distressing these may be. The same remark is, we believe, strictly applicable to the prognosis of most cerebral affections in children. When the urinary secretion is scanty and deep-coloured, the circulation seems to be both oppressed and excited; and the rapid, on some occasions almost instantaneous, mitigation of the alarming symptoms after a copious discharge of water is well known to all experienced practitioners. To promote this critical diuresis, a purgative composed of senna and salts, and then frequently repeated doses of nitre,* are the simplest and most efficient means that can be resorted to.

The chief danger of dentition is referrible to the vascular excitement of the brain. Nor is this wonderful; when we consider that for several successive months there is a continued, and often very severe, irritation in its immediate neighbourhood. The pain attendant upon the cutting of merely one tooth, in our adult years, may teach us to form some idea of the suffering of an infant during the period of its first dentition.

Now it is a common observation that almost all headaches are most promptly relieved by whatever stimulates the kidneys to throw off a quantity of urine. When this takes place the system feels at once relieved of a load or oppression which seemed to clog all its energies, and the mind as well as the body becomes more light and vivacious. We are thus led by the experience of our own feelings to anticipate the benefits which must attend the stimulation of the kidneys in the various affections of children arising from teething.

On the whole, we do not think that there is a more important sign to be attended to in the management of children, during the first two years of their life, than that afforded by the state of the urinary secretion. If nurses and mothers were better aware of this simple, but most valuable suggestion, the life of many an infant might be saved; for disease would often be detected in its earliest stage, and then might certainly be arrested by the administration of appropriate means. With regard to medical men, we strongly counsel them to make it an invariable rule in their practice to inquire into the state of the urine. As we have already hinted, we can more generally depend upon the reports of mothers and nurses as to the appearances and condition of the urine than of the alvine evacuations, in those cases where we cannot examine the excretions for ourselves.

Nothing will more contribute to relieve the system of the feverish irritation, under which the system of a child suffers during dentition, than a copious diuresis. We should bear in mind, too, that independently of the excitement arising from this cause, there is naturally and necessarily a tendency to over action of the blood vessels in the head during the first year or two of life. The brain, it is well known, is larger then in proportion to other parts of the body than in after years; all the senses are, probably, more acute, the mind as well as the body is rapidly growing, and perhaps scarcely a day passes over without there being made some addition or another to the store of infantine perceptions and ideas. We cannot wonder then that the simultaneous developement of so many organs and new faculties should have a powerful influence on the physiological and pathological phenomena which characterize this period of life. To refer all to the excitement arising from the evolution of the teeth, is to take a very partial, and therefore an erroneous, view of this important question. A valuable therapeutic principle is suggested by these considerations; and it is this: that in the treatment of many diseases of infancy we have rather to *regularise* than directly to check or overcome; and therefore that we should most attentively examine the condition of all the functions of the body, in order that we may discover the direction or sense, so to speak, in which nature's efforts are working, and be enabled to assist her in these efforts.

* Some practitioners are in the habit of adding minute doses of digitalis to the diuretic mixture; and seemingly with good effects. The following formula will be found to answer well. *R. Potassæ nitratis* ℥ij; *Aquæ m. viridis* ℥ijss; *Syrupi croci* ℥ij.—*Vini antimonialis* ℥iss; *Tinct. digitalis* ℥xvj. *M.* A tablespoonful to be given every two or three hours.

Before closing these remarks, we may very briefly allude to the notable effects which diuretic medicines sometimes exert on the progress of whooping-cough. The administration of nitred drinks and of minute doses of digitalis* seems often to promote the crisis of the disorder in its earlier stages; and in its more advanced and chronic form, the use of tincture of cantharides has been recommended by Dr. Watts and others, as one of the most efficient antidotes.† The excitement of the urinary viscera produces a powerful revulsion on the neurosthenic condition of the gastro-pulmonary apparatus, and thus seems to act as a derivative of the morbid action.

In fine, the kidneys become, in numerous cases of disease, the seat of an active eliminatory process, of which the skilful physician will avail himself in the treatment of dentition and of various other affections to which children are especially liable during the first two years of life. *Medico-Chirurgical Review*, from *Bulletin Gén. de Thérapeutique*, May 1839.

5. *Remarkable Tendency to Hemorrhage in a Family.* By Dr. Du Bois, of Neuchâtel.—This affection, which consists of an extreme fluidity of the blood, or a weakness of the capillary vessels, which are ruptured by the slightest violence, and have but little contractile power, is not uncommon in the west of Germany, and in the Rhenish provinces. It is hereditary in a striking degree; though only males are affected by it, to whom it is frequently transmitted by their mother, who is free from its influence. In some families scarcely a single male arrives at maturity, from this cause; and the person thus diseased bears the significant name of *Bluter* or *Bleeder*.

A robust gardener of Neuchâtel married a stout, healthy woman from Nassau, in whose family, according to her account, no *Bluter* had been known. By her he had a family, consisting of five boys, and one girl who never exhibited any symptoms of this complaint, and died in convulsions when three years of age. Of the five boys, one died of convulsions on the day of his birth; three died of hemorrhage; and the last, now seven years old, will probably soon follow his brothers, from the same cause. The symptoms exhibited the following course in all. A fortnight after birth, which was natural, ecchymoses began to appear in different parts of their bodies, spontaneously, or from the slightest pressure, and slowly disappeared, leaving a yellow tint behind them. About the end of the first year, but especially after the third, they were seized with violent epistaxis. The slightest puncture caused a great loss of blood; coughing produced hæmoptysis, and diarrhœa bloody stools in clots. The fourth bit his tongue at play, and died in a few days from the hemorrhage, which it was impossible to restrain. All were subject to frequent attacks of pain and swelling, with ecchymosis of the wrist, ankles, and knee-joints, attended with fever; the complaint usually lasted about a fortnight, and then disappeared with the subsidence of the swelling and removal of the ecchymosis. On one occasion, two leeches were incautiously applied to the knee of the eldest, the bites of which continued to bleed for three days, and were only stopped by the twisted suture. Except varicella, which the survivor has had, none of the others were attacked by infantile diseases, though prevalent in the neighbourhood. Dentition took place pretty early, and in a healthy manner. A tendency to diarrhœa, that was followed by bloody evacuations, was the sole affection of the organs of digestion to which they were liable. Their complexions were fair, with clear blue or brown eyes, and a skin remarkably fine and white. Their gums were always firm, and they never had ulcerations of the mouth or skin. Their intelligence was quite conformable to their age. Their urine was usually clear and limpid, but they had great tendency to perspire. The eldest died of epistaxis, at the

* Dr. Simon recommends the external use of tincture of digitalis rubbed, as a liniment, on the abdomen.

† A favourite formula of some physicians in certain chronic cases of whooping-cough is the following:—R. Tinct. cichoræ. ℥ij; Tinct. lyttæ. ℥j; Tinct. camphoræ comp. ℥ij; Mist. Camphor. ℥ijss; M. Capiat coch. j. magnum ter in dies.

age of twelve; the second died at the age of eight, of hemorrhage from all the mucous surfaces; and the third, as before mentioned, from biting his tongue, when twenty months old. The blood from these hemorrhages was very fluid, of the ordinary colour, and coagulated like other blood.

The surviving boy has undergone the same complaints as his brothers; he is seven years old, of ordinary stature, delicate, rather thin, light complexioned, with light brown eyes, that are quick and intelligent; his skin is extremely white and transparent, with very little appearance of veins, that are very small, even on his hands and forearms; his face is exceedingly pale, but his nose, like that of his brothers, is of a bright red. His pulse is eight or ten beats quicker than in boys of his age, his breathing is normal, his gums are firm and sound, and the ends of his fingers exhibit no peculiarity. Respiration is puerile; there is slight hypertrophy, and the beats of the heart are very strong and smart (*secchi*), a circumstance also observed by his mother in the other children. The sounds of the heart are natural; and none of the children were subject to palpitation nor dyspnoea. No enlargement of the liver or spleen can be detected.—*Brit. and For. Med. Rev. from Omodei Annali. lxxxv. 1838.*

6. *Ulceration of the Throat extending to the Lingual Artery; death by Hemorrhage.* Dr. DUNCAN presented to the pathological society of Dublin the recent parts in this case. The patient, a young man, had been under treatment in the Adelaide Hospital, for ulcerated sore throat, for some time, when he was suddenly attacked with hemorrhage from the throat, which returned twice in the course of a fortnight. He had left the hospital, but was readmitted, and on the following day the bleeding returned with greater violence, and he was much exhausted.—The ulceration was found to have attacked the right lingual artery, which presented a perforation capable of admitting a large sized probe. The os hyoides was found to be carious. Dr. Duncan alluded to cases of the same kind which occurred under the care of the late Dr. M'Dowell, in one of which the external carotid had been tied with perfect success.—*Dublin Journal of Medical Science.*

7. *Softening of the anterior column of the Spinal Cord, in its cervical portion.*—Dr. POWELL begged to draw the attention of the society to a well marked and recent specimen of acute softening of the anterior column of the spinal cord.—The patient, a woman *ætat.* 50, was suddenly attacked with paralysis of motion in the upper and lower extremities. The bladder and rectum were unaffected; a slight power of motion remained in the limbs. There was no loss of sensation; no fever, headache, or disturbance of intellect. Sensation in the paralysed portions was perfect. Soon afterwards she was attacked with dyspnoea, and her breathing became diaphragmatic: ultimately the diaphragm became paralysed, and death took place with great dyspnoea. The spinal column was opened on the following day, and the cervical portion of the medulla spinalis was found softened to a great degree.—*Ibid.*

8 *Fragilitas Ossium.*—Mr. ADAMS exhibited to the Dublin Pathological Society, the recently removed parts in this case, the subject of which was a man, *ætat.* 41, who had been an inmate of the House of Industry for five years, having been compelled to abandon his employment, in consequence of severe pains in the legs and thighs; he was bed-ridden for two years before his death; upon one occasion the left femur broke across in the centre from slight exertion; while raising himself in bed, the olecranon was fractured, and afterwards he got a fracture through the neck and trochanter of the right femur; during the latter part of his existence he suffered great agony, and died worn out by diarrhoea. Upon examination the muscles were found wasted, and containing between their fibres a soft unhealthy adipose; the bones were soft, and contained a large quantity of oily matter; the left femur was broken in its lower third and in its centre; the greater trochanter was separated from the shaft, and the cervix broken within the capsule, and absorbed completely; the two fractures which occupied the shaft of the bone had undergone osseous union, but with great overlapping and consequent shortening of the

limb; the fracture of the right femur ran through the trochanter, it was comminuted, and extended within the capsule; an immense quantity of osseous matter extremely porous and vascular in its texture, was thrown out on the entire of the left femur, and bony spiculae projected from it among the muscles; a large plate of bone was found in the gluteus medius.—*Ibid.* July, 1839.

9. *GUYON, on Living Worms under the conjunctiva of the Negro.*—Blot of Martinique has, like Bajon of Cayenne, and Mongin of St. Domingo, seen two worms in active motion under the conjunctiva, which he removed by incision. One of these, which was sent to M. Blainville, was thread-shaped, thirty eight millimetres long, with a black protuberance adapted for suction.

Bajon remarked (1768) a serpentine motion of a worm in the eye of a negress which, without giving pain, caused constant epiphora. When an incision was made, the worm went to another part, and was obliged to be secured with a small forceps. In a second case (1771) the conjunctiva was more inflamed, the patient refused to submit to operation. In Blot's case (1898) the worm lay on the outside of the eye, and sometimes turned around a portion of the corner, causing stinging pains and nervous symptoms arising probably from fear. The patient, an African negress, was unable to tell where she came from, or whether her fellow-country people were subject to this disease. A surgeon at Mompo (New Granada) offered to extract this worm, but his services were refused. The worms found by M. Guyon were not of the species termed *Filaria Medinensis*, which are found in abundance amongst Africans, and could not be secured by the forceps.—*Dublin Journal*, from *Zeitschrift für die gesammte Medicin*, Feb. 1839.

In the *London Med. Gazette* for Aug. 1833, there is given the case of a little girl, six years old, under whose conjunctiva, and resting on the sclerotica, there was found a cysticercus cellulosa perfect in all its parts.

10. *Chronic Endocarditis with permanent Patency of the aortic valves.*—Dr. Corrigan laid on the table of the *Dublin Pathological Society* the heart of a young man, who was attacked with acute rheumatism in 1822; he recovered from this under active treatment, but did not regain his usual state of health; he became subject to palpitations, for the relief of which strict antiphlogistic treatment was enjoined and persisted in, until the extreme debility of the patient would no longer allow of it; an opposite plan of treatment was then recommended, and under the use of stimulants and nutritious diet he improved rapidly. Being a member of the medical profession, he was elected in 1826 as superintendent of a dispensary in the country, and for many years was able to discharge his duties with great activity. In 1835, he applied to Dr. Corrigan for a certificate to enable him to effect an insurance on his life, and stated that his health was perfectly restored. Dr. Corrigan declined giving the certificate, having detected a bruit de soufflet under the sternum, accompanied by pulsation of the veins of the neck and fremissement of the carotids. He continued to enjoy tolerably good health until a few months ago, when he was attacked with symptoms of gastric and hepatic derangement, followed by debility and complete prostration; the action of the heart became so feeble, as to be scarcely perceptible, when he raised himself into the erect posture. He died in syncope.

Upon opening the chest some adhesions, seemingly of recent formation, were found between the heart and pericardium; a vast number of warty excrescences existed upon the surface of the aortic valves, which were thickened, indurated, and puckered, so as to be incapable of closing the opening of the artery; the left auriculo-ventricular opening was slightly contracted; the heart had acquired an enormous size, owing to the inefficiency of the aortic valves to discharge their functions.

Dr. Corrigan remarked that this case, taken in connection with others of a similar nature, led to the conclusion, that in permanent patency of the aortic valves hypertrophy of the heart is a provision of nature, to enable the organ to propel its contents, and support the additional weight thrown upon the ventricle, in consequence of the inadequacy of the valves to the performance of their func-

tions: it was also obvious, that in such instances antiphlogistic treatment was injurious. For, fourteen years preceding this patient's death, the bruit de soufflet was never absent.—*Dublin Journ. of Med. Sci.*

MATERIA MEDICA AND GENERAL THERAPEUTICS.

11. *On the employment of a new Vegetable Monesia, in Medicine.* By Dr. G. J. MARTIN St. ANGE.—A vegetable substance called *monesia*, has lately been imported from South America, in the form of hard thick cakes, weighing about five hundred grammes (9215 grains.) These loaves, which are flattened, and have paper of a yellow colour adhering to them, are composed of the extract, prepared in the country, from the bark of a tree whose botanical name is not known. M. Bernard Derosne, the druggist who introduced it, informs me that some travellers call the monesia bark *goharem*, and others *buranhem*. But what is of more importance is, that the naturalists who have examined it think that the tree which furnishes it is a *chrysophyllum*.

The extract is of a deep brown, and very friable; when broken it looks like a well-roasted cacao nut. It is entirely soluble in water, and its taste, which is at first sugary like liquorice, soon becomes astringent, and leaves behind a well-marked and lasting acid taste, which is particularly felt in the tonsils.

The bark of the monesia is smooth and grayish, like that of the plane tree, with this difference, however, that it is much thicker, that its fracture is imbricated, and that its sweet taste forms a strong contrast with the bitterness of the thin laminae which are detached from the plane.

The chemical analysis of the bark of the monesia, and of the imported extract, according to MM. Bernard Derosne and O'Henry, has demonstrated the presence of the following soluble principles:—1. Chlorophylle; 2. vegetable wax; 3. a fatty and crystallizable matter; 4. glycyrrhizine; 5. an acrid and somewhat bitter substance; 6. a little tannin; 7. an unexamined organic acid; 8. a red colouring matter, resembling that of cinchona; 9. phosphates of lime, with organic acids.

The pharmaceutical preparations which have been made with this substance are—1. an aqueous extract; 2. syrup, containing thirty centigrammes (5½ grains) in the ounce; 3. a hydro-alcoholic tincture, containing two grammes (37 grains) per ounce; 4. chocolate, containing thirty centigrammes (5½ grains) in each cake weighing three decagrammes (7 drachms, 49 grains); 5. an ointment, containing an eighth part of its weight of extract; 6. monesine, being the acrid substance mentioned in the analysis.

The extract contains about eight per cent. of glycyrrhizine, and twenty per cent. of acrid matter.

The following accounts of monesia are already in existence:—1. A manuscript memoir, which is in the hands of the commissioners appointed by the Academy of Medicine. 2. A synoptical table, giving the analysis, some pharmaceutical preparations, and the medicinal preparations of monesia. 3. A very minute summary of these two papers, entitled, "Account of Monesia." 4. An article inserted in the *Bulletin Thérapeutique*.

I will now give a succinct account of the facts which have been published, before mentioning the results which I have obtained myself.

The medical cases in the synoptic table have been drawn up by several physicians in Paris; they give the nature of the disease, the sex, the profession, the age, and the constitution of the patient; the mode of treatment, the duration of the disease, the termination; and lastly, the remarks suggested by each method of treatment.

M. Alquié, professor of internal pathology at the Val-de-Grâce, found—

1. That of forty-two soldiers attacked with diarrhoea of different degrees of severity, thirty-six were cured in twelve days; twenty-four by the extract of monesia given in pills, in the dose of from eighty centigrammes to a gramme

(14½ to 18½ grains) a day; and twelve by the tincture, administered as a clyster, in the dose of eight grammes (147½ grains) in two hundred and fifty grammes (4607½ grains) of bran water.

2. That in two cases of menorrhagia, the extract and the tincture of monesia given internally soon calmed the pain, and stopped the uterine discharge.

3. That in four women attacked with profuse leucorrhœa, the extract of monesia given internally, and the diluted tincture injected into the vagina, were beneficial.

4. That in two cases of hæmoptysis, where bleeding, ligature of the limbs, and ordinary astringents, had been employed without advantage, the extract of monesia succeeded completely; and that several chronic cases of bronchorrhœa were benefited by the syrup of monesia, which was sometimes combined with opium.

M. Baron cites—1. A very remarkable case of chronic inflammation of the vagina, of a syphilitic kind. No advantage had attended the previous use of baths, local bleedings, emollient and astringent injections, the nitrate of silver; a year later the diluted supernitrate of mercury, sulphureous baths, leeches, and the repeated application of blisters and sinapisms, were equally useless. In spite of these remedies the discharge from the vagina became more abundant. Injections were then used containing thirty grammes (559 grains and 9-10ths) of the extract of monesia in a hundred and fifty grammes (2764½ grains) of water. In eight days the discharge was much diminished, and in three weeks the patient was cured. The discharge returned in a month, but again yielded to the same injection.

2. A case of leucorrhœa. The discharge was copious, of a yellowish white colour, and accompanied with pains in the groins and lumbar regions; baths, leeches, and injection of mallow water and laudanum, had produced no benefit. Injections of monesia, in the proportion of thirty grammes (559 grains and 9-10ths) to a hundred grammes (3317½ grains) of water, were employed once a day, and the patient was cured in a fortnight.

3. Several cases of diarrhœa, which resisted the means generally used, were cured by the extract of monesia given internally, and clysters containing the tincture, in different proportions.

M. Buchez has employed the extract of monesia, and has remarked, that it delayed the progress of caries in the teeth, and that, when combined with opium, it often soothed the pain more effectually than the opium alone. He recommends the employment of the tincture to keep the gums in a healthy state.

M. Daynac speaks of the good effects he has obtained from the preparations of monesia (the syrup, lozenges, and paste) in several cases of the chronic catarrh of the old, in dyspeptic persons, and in the third stage of phthisis. He also cites remarkable cases of scrofulous engorgement, much benefited by the use of the tincture of monesia, in the dose of eight grammes (147 1-2 grains) daily, continued for a greater or less time. Lastly, the extract of monesia in pills, in the dose of from sixty to ninety centigrammes (11 to 16 1-2 grains) has been very serviceable in uterine discharges.

M. Laurant speaks of a well-marked case of scurvy which he cured with monesia. The patient had had frequent epistaxis, which had several times required the nostrils to be plugged. He was made to inspire acidulated water by the nostrils, containing thirty grammes (559 grains and 9-10ths) of the tincture to a pound of water. This stopped the hemorrhage; but when the same thing had been done with acidulated water not containing monesia, it had not succeeded. The patient also took from a gramme to a gramme and a half (16 1-2 to 27½ grains) internally every day. The same physician has ascertained the efficacy of monesia in a great variety of circumstances, particularly in gangrenous eschare on the sacrum.

M. Manec has employed the different preparations of monesia with success:—1. In a man who, for six years, had had a large serpiginous ulcer in the bend of the groin, which had resisted every kind of treatment, and which rapidly improved under the use of monesia ointment.

9. In a great number of aged women labouring under diarrhœa, and in persons affected with chronic bronchitis.

M. Monod has furnished some very interesting cases; some of ulcers of the nose, and others of affections of the intestinal canal. The ulcers were dressed with the powdered extract, and cured in a few days. In the other cases the extract given in pills to the amount of from sixty to a hundred and twenty centigrammes (11 to 22 grains) daily, was perfectly successful.

M. Payen, who has employed monesia in a great number of cases, has seen a patient in whom leucorrhœa was considerably increased by this medicine, administered two different times; the monesia was then tried as an injection, and the discharge, which had hitherto resisted every remedy, disappeared, and did not return. The same practitioner cites two cases of uterine hemorrhage, where the patients were obliged to keep their bed for a fortnight at each menstrual period, and in which the monesia brought back the discharge to its healthy standard. Lastly, M. Payen has succeeded in cicatrizing an ulcer in the lower jaw, which, for ten months, had resisted every kind of treatment, both internal and external; and in healing ulcerated chilblains, by means of the ointment and the powdered extract of monesia.

Thus we see that monesia has been employed both externally and internally. It has been frequently administered during the chronic stage of bronchitis, usually alone, but sometimes combined with opium, and in the greatest number of cases it has seemed to act advantageously upon the disease, the expectoration and respiration being rendered more easy.

In many cases where pulmonary hemorrhage was prolonged, having resisted various and generally efficacious remedies, the extract of monesia has stopped the spitting of blood.

In weakness of the stomach monesia has a favourable influence on digestion, and secondarily on nutrition. This medicine has also been very beneficial in chronic enteritis; it has chiefly succeeded against diarrhœa, from whatever cause it arose.

The efficacy of monesia taken internally has been less marked in leucorrhœa than in diarrhœa, yet it has been useful in the majority of patients who have taken it; but injections have been more advantageous.

In every case of uterine hemorrhage where monesia has been given, it has succeeded in moderating and suppressing the discharge more readily than the other remedies which had been previously used.

Monesia has also been of great advantage in scorbutic and scrofulous affections, and has always benefitted ulcers of a bad character, whether the ointment, or the pure extract powdered, or the acrid substance contained in it, has been employed.

Such is the compendium of the cases hitherto published, with the exception of four by M. Forget, which are the basis of the article that he has published in the *Bulletin Thérapeutique*, and which, as he says himself, neither tell for nor against monesia.

We may say, therefore, generally, that monesia shows its maximum of power in diseases of the digestive organs, in hæmoptysis, uterine hemorrhage, and ulcers of the skin, or of the mucous membranes, at their origin. A remarkable point in this remedy is, that although it is gifted with energetic powers, and has acted upon the tonsils or upon ulcerations as an active stimulant, it has never irritated the stomach as tonics, properly called, often do. In order to form a due estimate of its relative activity, we must not forget that it has always been employed after the exhibition of other remedies.

I now come to my own cases, the general results of which may be stated as follows:—

Monesia, when exhibited internally, in the dose of from 75 to 125 centigrammes (14 to 23 grains) of the extract daily, for eight or ten days, whether in the form of pill, tincture, or syrup, has an immediate effect upon the digestive passages, and quickens the action of the stomach in a very remarkable manner. If the dose of the remedy is pushed to four grammes (74 grains) of

the extract daily, for fifteen or twenty days, the appetite increases, but the patients sometimes experience a feeling of heat in the epigastrium: *tenesmus* and obstinate constipation may also come on; hence its action upon the digestive tube should be moderated by diminishing the dose according to the effect produced, and administering emollient or laxative clysters, as may be required.

Monesia ointment may be employed externally, upon sores, in every case, but with more or less success, according to circumstances: thus I have seen it succeed in large and excessively painful ulcers, arising from the action of blisters, in sores produced by burns, in varicose ulcers and old wounds; in a word, whenever the sore is painful, and depends on a merely local affection. When this is not the case, and the ulcer is kept up by syphilis, scrofula, scurvy, or cancer, it is impossible to effect a permanent cure by merely applying the monesia ointment, washing the sores with the tincture, or sprinkling them with the extract or acrid principle contained in it. Yet, by employing these different preparations in a proper manner, we may hope to modify the sores, and even to cure them for a time. Generally speaking, the ointment, when applied to a sore, calms the local pain; the tincture thus used, produces a sensation of heat, which ceases immediately; the powdered extract more or less excites the sore, and the acrid principle in powder, when well prepared, has a special activity greater than caustic: hence it is a powerful remedy against fungous or atonic ulcers of a bad appearance; but as soon as these sores become painful, and especially when they are covered with a whitish pellicle, the use of the acrid principle should be discontinued; for it is usually this pellicle which, by preserving the surface of the sore from contact with the air, and perhaps by becoming partly organized, produces cicatrization.

I have said expressly, that it is impossible to obtain a lasting cure of syphilitic or cancerous sores by the mere external use of this remedy; in such cases, therefore, we must have recourse to a specific treatment capable of acting on the system. I have found that in order to effect the cure of scrofulous ulcers, the monesia must be employed internally, for five-and-twenty or forty days, and even longer, according to the case; and this in large doses, such as four or five grammes (74 or 92 grains) of the extract daily, in the form of pill, tincture, or syrup. In this way I have succeeded in curing or benefitting several scrofulous patients. Here follow two remarkable examples.—

CASE I.—A young man of 17, a printer, born of very healthy parents, came to see me in February, 1839, to have the little finger of his left hand amputated. On looking at the diseased parts, I saw it was a scrofulous affection of only eight months' standing. The first phalanx was much swelled, the soft parts covering it were livid, and there were three fistulous openings in the skin; two corresponding to the dorsal part of the phalanx, and the third to its palmar surface. They were surrounded with callous vegetations of a brownish colour, and communicated with one another by means of subcutaneous fistulous passages. By introducing a blunt probe into the sores, it was easy to reach the bone of the finger, and to ascertain the detachment of the skin and the caries of a portion of the phalanx. The suppuration was serous, yellowish, of a faint odour, and contained some flakes of a substance which seemed curious. Strong pressure of the diseased tissues occasioned hardly any pain. On the back of the hand and the left elbow there was also a swelling of the skin and of the subjacent parts, looking like the little finger. The swelling and livid patch extended from the elbow to the inside of the bend of the arm; its centre was ulcerated, and covered with a thick crust, which, according to the patient's report, was renewed every two or three days.

I began by sprinkling the acrid principle of monesia on the small sores of the finger. After some day's dressing, the swelling of the soft parts began to diminish, and at the end of about twenty days the fistulous openings entirely closed. The diseased tissues at the back of the hand then ulcerated, and the acrid principle being employed as above-mentioned, in a few days a cure was effected. There remained only the sore upon the elbow, which had been purposely dressed with cerate. It continued to suppurate, and to be covered from time to time with a fresh crust.

The patient was in this state when I presented him to Dr. Bally, who had been commissioned by the Academy to report on the effects of monesia. The affection appeared to him to be evidently scrofulous, and the result obtained to be very satisfactory. The disease, however, soon reappeared; the fistula of the finger began to suppurate again; there was swelling and livid redness of the soft parts, with engorgement and induration of the back of the hand; the sore on the elbow became larger and deeper. The patient now entered the hospital of St. Louis, where he had internal medicines as well as fumigations, sulphurous baths, &c. In a month he came out, with the diseased parts in a worse state than ever. I now prescribed the internal use of monesia—namely, twelve pills, each containing 20 centigrammes (3 1-2 grains,) and two spoonfuls of the tincture. The sores were dressed with common cerate. Under this treatment the patient was cured in thirty-five days. Nevertheless he continued to take five pills a-day till the fiftieth day.

Since July, the diseased parts have been constantly improving, and a lasting cure may be hoped for. It is right to state, that in this case the preparations of monesia did not cause tenesmus or constipation, although the patient did not employ any purgative; the only thing he complained of was too much appetite.

CASE II.—M.—, *etat.* 40, who had always enjoyed perfect health, came to France two years ago, and perceived, in the month of April, 1839, that he had an indolent tumor in the left inguinal region. Several physicians of the capital were consulted, and they ascertained that it was a swelling of one of the superficial lymphatic glands, situated in the bend of the groin. On the 21st of the same month, I was also consulted by the patient. The diagnosis was not difficult, but the point was to know how the tumor would turn out. My prognosis was favourable, like that of all the other physicians, excepting M. Lisfranc, who thought that the swelling of the gland, though slight, depended on a general affection. On the 2d of May the groin continued to swell, and from that time all the other glands of that part, as well as of the left iliac fossa, swelled considerably; and this was soon the case with those of the opposite side. Twenty pages would scarcely suffice to tell all that was prescribed by the physicians, and patiently submitted to by M. —. No remedy was of any use, except for a short time; and I therefore proposed monesia, in the dose of 150 centigrammes (28 grains) of the extract a-day. The patient at this time was extremely weak, ate but little, and was feverish every day. In a week; digestion had improved; there was a sensible increase of strength, and no fever. The sores were dressed with the monesia ointment. In consequence of these results, I tried to augment the dose of the medicine, and, besides the extract, the patient took two spoonfuls of the tincture, and from four to six of syrup in an infusion of hops. As to the sores, which obviously grew better, the same dressing was continued morning and evening, and every thing promised a speedy cure, when constipation and a most painful tenesmus came on, which obliged us to suspend the treatment. In a few days the sores became larger and larger, fungous, and of a bad appearance.

The dressing was then changed—extract of monesia in powder and the tincture being employed; but these remedies were almost as useless as a host of others which were successively tried. It then seemed clear to me that the internal use of monesia had alone produced the improvement, and its use was accordingly resumed, taking care to make laxatives a part of the treatment. For this purpose the patient had two glasses of Enghien water every morning, and an emollient clyster. In a fortnight, the good effects of the monesia were again perceived; and this was the more to be attributed to its internal use, as the dressing had been performed with simple cerate.

At present, the swelled glands of the groin are softening and disappearing, without any supuration. Those of the iliac fossa are diminishing in size; the sores have cicatrized, and the disease, far from attacking the lymphatic glands of the other parts of the body, as is commonly the case, is localized, and is much lessened. The patient eats with a good appetite, sleeps well, and takes exercise three hours a day, which makes us hope for a fortunate termination of the disease.

Another result which I have obtained from the use of monesia, and which has been observed by other practitioners likewise, is its action upon the uterus in cases of metrorrhagia. I will give two instances:—

CASE III.—Madame—, of a plethoric constitution, was attacked, after the catamenial period, with a flooding, which obliged her to keep her bed and seek for advice. After having employed cold drinks, ligatures on the limbs, cupping-glasses, and other revulsives, without success, I made the patient take five monesia pills, each containing 20 centigrammes (3 grains and 3-5ths.) The next morning she was very weak; the skin burning, the pulse scarcely perceptible, the face pale, and the eyes sunken. She had shivering fits from time to time, a sensation of weight in the loins, transient colic pains, and headache, with sleepiness; and what was more, the hemorrhage did not diminish. I then prescribed twelve pills of extract of monesia to be taken every hour. The discharge stopped the same day, and never returned.

CASE IV.—Madame—, aged 30, who had been married six months, had frequent pains in the loins; and in a few days a flooding came on, which obliged her to keep her bed. The hemorrhage increased, as soon as the patient got up; there was no pain in the abdomen, and no constipation; the pulse was weak and irregular, and from 76 to 80 in a minute. Revulsives, cold and acidulated drinks, clysters of cold water, and compresses dipped in iced water and applied to the thighs, had no effect. The ergot of rye was then employed, but as this excited vomiting, it was discontinued, and pills of the extract of monesia were ordered to be taken every hour, until an effect was produced. After fourteen pills the hemorrhage ceased. The patient then took cold broth at intervals, and in spite of the lightness of this food, the discharge returned in the evening with violence, and again ceased after the exhibition of ten monesia pills.

On the following day, the dose of the medicine was diminished to 75 centigrammes (14 grains), and in six days the patient was quite well.

Quite lately, I employed the acrid principle in powder, in the dose of 15 centigrammes (3 grains and 7-10ths), taken in a prune; it was to stop a uterine hemorrhage, which had suddenly come on during the night; the discharge ceased the same day. But as this case stands alone, additional facts are necessary to prove the power of the acrid principle under such circumstances. In every case, monesia acts in a remarkable manner upon the uterus, when it is not in its natural state. This new medicine may be used in different ways, and it acts on different organs, particularly when they require to be strengthened without too much excitement.

This is confirmed by the following passages from M. Buchez:—

"I have tried the extract of monesia," says this skilful practitioner, "in different affections of the mouth, particularly in inflammation of the gums, and uniformly with advantage. Its application produced a good effect, by almost instantaneously soothing the pain, which often accompanies inflammation. This mode of treatment I have found very successful in the scorbutic swelling of diseased gums, and it has removed affections which had previously resisted other remedies. When caries of the teeth is attended with pain, the application of monesia is sure to remove it in a few moments."

When all the ascertained facts are compared together, one is struck by the very peculiar tonic action of monesia on every organ. As its powers have been tried in more than four hundred cases, we may be allowed to consider monesia as a very useful remedy, under several circumstances, particularly scrofulous affections and uterine hemorrhage. Hence the art of healing was made a real acquisition; nor is it to be imagined that this tonic has any analogy with those already known, quite lately a tannin ointment, and monesia ointment were tried and compared with each other, and the advantage was on the side of the latter. Moreover, it is clear that every medicine acts in its own way, and that there can not be two whose special effects are the same. Well-informed practitioners know that one purgative can not be indifferently substituted for another; that every narcotic has not, in the same degree, the power of soothing

and producing sleep; that the action of the various tonics is also very different; and that the general-effects of medicines are like the difference of faces; many resemble each other at the first glance, but none can sustain an exact comparison.—*Lond. Med. Gaz. from Gazette Médicale de Paris.*

12. *Tannin in Hemoptysis.*—The superiority of pure tannin over the substances which contain it in greater or less proportions, was pointed out three or four years since by M. Cavarra. (See this Journal for Nov. 1837, p. 223.)

It appears from the *Journal de Med. et de Chirurg. Prat.* (Nov. 1839,) that this substance has more recently been employed in hemoptysis by Dr. AMÉDÉE LAROUX, who highly extols its efficacy in that disease. In one case in which other astringents had failed, it perfectly succeeded; and in three others it was equally successful, but in these last the hemorrhage was slight.

He employs the following formula: R.—Tannin. puræ, gr. iv; Pulv. gum Arab. gr. xvi; Syr. simp. q. s. Misce.—Ft. pilul. No. viij. Four to be taken daily (one at a dose, at intervals of three hours) for two days. This article occasions constipation which must be removed by enemata.

13. *Utility of Nux Vomica in various forms of Paralysis.*—M. PETREQUIN, one of the surgeons of the Hotel Dieu, at Lyons, has recorded his experience of this powerful drug, in an elaborate and very practical paper in a recent number of the *Gazette Médicale de Paris.*

He employs it both internally and externally. He prefers the alcoholic extract—prepared with two pounds six ounces of the grated nuts, and 22 pints of alcohol—to the strychnine for internal use; beginning with the eighth part of a grain for a dose, and gradually increasing it to two, three, or even five grains in the course of the day.

For external use the strychnine is, as a matter of course, to be preferred.

M. Petrequin alludes to the frequent failure of the endermic use of strychnine, owing to the vesicated surface, to which it is applied, becoming covered with a layer of coagulable lymph. In consequence of this, the strychnine is not duly absorbed. This layer of lymph should be removed as well as possible at each application; but, as the vesicated surface becomes daily less and less absorbent, the dose of the strychnine must be proportionably increased. The mode which M. Petrequin recommends, is to sprinkle a third or fourth of a grain of the alkaloid, mixed with two or three grains of the powdered nux vomica itself, on the surface, which has been vesicated by means of the *pommade ammoniacale*.

Along with the use of the strychnine in this way, he employs a tincture of the nux vomica—prepared with four ounces of it in powder and one litre of brandy as an embrocation to and around the palsied parts.

M. Petrequin has related several cases of, more or less complete, *hemiplegia*, which were either quite cured or greatly relieved by the use of the nux vomica.

In all of them, the muscles of the palsied parts became affected with sudden involuntary twitchings, and the patients experienced electric-like shocks in different limbs, before the complete recovery of their lost powers.

Four cases of *paraplegia* also, in which the strychnos seemed to act most beneficially, are recorded.

In the first of these cases, the paralysis was the result of a severe injury of the back from a heavy log of wood falling upon it. For three months the patient had been confined to bed, when M. Petrequin first visited him. Although the sensibility and motility of the inferior limbs had begun to return, and the general health of the patient to be somewhat re-established, he was still so helpless that he could neither stand nor even support himself sitting in bed.—There was also a complete incontinence* of the urine, so that it was continually escaping drop by drop; and, to add to his distress, an ulcer had formed over the sacrum.

* For the first three weeks after the accident, there was a retention of the urine, so that it required to be drawn off several times in the course of the twenty-four hours: it was very sedimentary, and occasionally almost as white as milk.

A large vesication over the loins was raised by means of the *pommade ammoniacale*, and the excoriated surface was then sprinkled with a fourth of a grain of strychnine, mixed with three grains of powdered nux vomica: this was repeated every day.

Within a week a very decided amendment was visible; for not only was he able to sit up for some time, but he also began to retain his urine to a certain degree.*

A fresh blister was twice repeated within the next fortnight, and the dose of the strychnine was raised to half a grain.

By this time he was able to walk a little with the assistance of a stick, and he could now hold his urine for two hours at a time. The treatment was persevered in for some weeks longer, and ultimately the patient quite recovered the use of his limb, and command over his bladder. No preparation of the nux vomica was administered internally.

In the next case, the *paraplegia* was connected with a gibbosity of the dorsal vertebrae in a youth of 19 years of age, and was accompanied with a retention of the urine.

Three small caustic issues were made on each side of the projection; and two pills, containing each a quarter of a grain of the alcoholic extract of nux vomica, were administered daily. The dose was gradually increased, so that at the end of the third week, the patient took three grains daily of the extract. By this time, the bladder had recovered in a great measure its contractility, and the patient was able to stand with the support of a stick. The treatment was steadily persevered in for some weeks longer; the dose of the medicine had been increased to seven grains daily, and the recovery was so steadily progressive, that, at the end of two months from the commencement of the use of the nux vomica, the patient was able to run about the ward of the hospital.

Several cases of *local paralysis*, as of one or more of the fingers, of the deltoid muscle, &c. treated successfully with the nux vomica—either in the way of frictions with the tincture, or of the endermic use of the strychnine, as explained above—are then detailed by M. Petrequin.

Local *anesthesia* also, or loss of sensibility in a part, has in numerous instances yielded to use of embrocation with the tincture.

A woman, 46 years of age, had for four years been affected with a complete loss of sensibility along the outer half of the left thigh; she dreaded the cold much, and experienced now and then sharp pains in the part which felt to her to be quite dead. After the application of a few leeches, the tincture of nux vomica was rubbed on the part night and morning. In the course of a week, the *anesthesia* had quite ceased.

Lastly, several cases of amaurotic blindness, which were decidedly and quickly relieved by means of friction over the temples with the tincture of the nux vomica, are detailed at length. It is unnecessary to mention the particulars of these cases as they are all more or less like each other. Suffice it to say that the remedy is useful only when the amaurosis is simple, and uncomplicated with an inflammatory or congestive state of any of the tissues of the eye.—*Med. Chirurg. Rev.* July, 1839.

* M. Petrequin mentions that he has treated successfully many cases of nocturnal incontinence of urine occurring in children, with the tincture of the nux vomica, as an embrocation to the loins and perineum. Another method, to which he has sometimes recourse, consists in the introduction into the rectum of a seton or thick skein of thread, well smeared over with a cerate of nux vomica.

In the *Archives G n rales*, for January, 1836, several successful examples of the internal use of the medicine are related.

SPECIAL PATHOLOGY AND SPECIAL THERAPEUTICS.

14. *Pathology and Treatment of Diabetes.*—The *Révue Médicale* for June, 1839, contains a memoir on this subject by Dr. BOUCHARDAT, which possesses some interest. It is known that in this disease there is a considerable increase in the quantity of urine passed, and that one of the most painful attendants is the excessive thirst. The sugar which is contained in the urine is the same as the sugar from grapes. It results, according to M. B., from the transformation of fecula as is effected in the laboratory. The leaven, the gluten, the albumen, and the fibrine meeting, the starch in the stomach produces the same result, and the author states that he has constantly observed in all diabetic patients, that the quantity of sugar contained in the urine was always in direct proportion to the quantity of bread or of farinaceous or saccharine aliment which they had taken in the twenty-four hours. If then we diminish the quantity of saccharine or farinaceous food, the quantity of urine passed, and of sugar contained in the urine, will immediately diminish, and in a corresponding proportion. By preventing, almost entirely, the patient taking this kind of food, the urine will gradually be reduced to its natural quantity and normal composition. The thirst of diabetic patients is in direct proportion to the saccharine or farinaceous food which they take. For a quantity of aliment representing a pound of fecula, they usually drink seven pints of water, and pass nearly eight pints of urine. If we diminish or withhold saccharine or farinaceous aliments, the thirst immediately diminishes in the same proportion. Dr. Bouchardat adduces the case of a patient who was astonished to find his urgent thirst completely extinguished, on his abstaining from saccharine and farinaceous articles, and eating roast beef and salt ham. In fact, the cause of this thirst, which torments patients, is easily understood. For the transformation of starch into sugar, it is necessary for the fecula to be dissolved in about seven times its weight of water. Diabetic patients require nearly as much water, which causes this irresistible thirst.

In the treatment of diabetes, M. B., in admitting the utility of animal food, recommends a careful abstinence from farinaceous and saccharine articles of food, and that patients should maintain a strict regimen. He may eat certain of the legumina, as sorrel, chioory, lettuce, cresses, spinach, &c., and eggs, fish, and meat of all kinds. No bread should be allowed at meals, or at most two or three ounces. But potatoes, rice, beans, peas, lentiles, preserves, and, in a word, all substances containing a great proportion of sugar and fecula must be proscribed.

A great number of remedies have been supposed to possess the power of removing the cause of diabetes, but a specific is yet to be discovered. Dr. B. hoped much from creosote, for this article prevents the transformation of fecula into sugar under the influence of diastasis, but he acknowledges that his trials with it have been followed by disappointment. Opium in gradually increasing doses succeeds in moderating the symptoms of diabetes, but it evidently acts by lessening the appetite, it does not remove the cause of the affection.

15. *On the Treatment of Acute Rheumatism by Opium.*—Eight cases of acute Rheumatism cured by opium alone are given in detail by Dr. CORRIEUX, and as the practice appears to be novel, whilst it recommends itself from its simplicity and general applicability, a short notice of these cases may be read with interest. When he first commenced the opium treatment he was afraid to trust it alone, and therefore combined it with calomel; finding that no good resulted from this combination, he dropped the calomel, and continued the opium alone.

Three of the cases are selected to illustrate the mode in which the remedy was administered.

Mr. R., aged 30, was seen on the 19th January, 1836. For several days he suffered from flying pains, but for the last three days he has been under the most acute suffering from pain in the shoulders, in the back of the neck, along

the loins, in the knee, wrist, and ankle-joints. The knees, ankles, and wrists were swollen, and exquisitely painful. He had slept none for three nights; the pulse was 132; the bowels free; the tongue covered with a thick white coat; the urine very high-coloured, and depositing a pink sediment; and the skin partially perspiring. One grain of opium with two of calomel were given every third hour, and opiate fomentations were applied to the joints. On the next day the pains were less, and the pulse had fallen to 120; but he had not slept. The opium was therefore increased to a grain and a half every third hour.

On the 21st he had slept some, and the pulse had fallen to 104. The pains were greatly diminished, and the swellings of the joints somewhat lessened. The opium was continued in the same dose. Next day he was found to have slept well, and the pulse had fallen to 92. The opium without the calomel was continued for three days longer in the dose of a grain and a half every third hour, at the end of which period, being quite free from pain, and with a quiet pulse, he was put on bark.

Dr. Corrigan attended his friend Dr. Aldridge, who had a very severe rheumatic attack of three days' duration when he was first seen by Dr. Corrigan. Nearly all the large joints were swollen and acutely painful, and the pains were shifting from joint to joint. The pulse was 120; the tongue very foul, but moist; and the want of rest from the agony of the pain was most distressing. He was immediately put on the opiate treatment. He first got one grain every two hours; the quantity was then increased to one grain every hour; and this was continued for thirteen days, with the administration of an occasional purgative. On the fourteenth day he began to take the *mist. guaiaci c. sulph. quinae*; and on the fifteenth day he was walking about his parlour, complaining only of not being so strong as usual, but free from pain and swelling. Dr. Aldridge calculated he had taken about two hundred grains of opium during the treatment.

Mr. H. aged 26, had suffered for three days under a very acute attack of rheumatism. The shoulders, wrists, and knees were swollen, and very painful; and the pains had been so severe that for three nights he had not closed an eye. His pulse was 120 and full; and his tongue moist. He was put on the opium treatment, and took every day for six days from eight to ten grains of opium. On the seventh day, he began to take along with the opium the *mist. guaiaci c. sulph. quinae*, and on the eighth day of attendance, he only complained of some stiffness in the affected joints. His pulse had fallen to 76, and his appetite was good.

In one of his cases pericarditis was threatened, the pulse became affected, oppression and constriction across the chest were felt, the countenance became anxious, and the patient was bathed in profuse perspiration. These unpleasant symptoms subsided under the steady use of the opium combined with a grain and a half of quinine to each dose.

Dr. Corrigan remarks, that "the most important rule to be remembered in employing opium for the cure of acute rheumatism is, that full and sufficient doses shall be exhibited;" unless carried to this length it is sure to end in disappointment. He mentions it as a singular circumstance, that sometimes during the progress of the cure under the opium, diarrhoea should come on so as to require the exhibition of chalk and kino. He recommends the local application of flannel soaked in warm spirit of turpentine, or in camphorated spirit, or in simple decoction of poppy heads, to the inflamed surfaces. If the patient should suffer much from constant profuse perspirations, he recommends the conjunction of sulphate of quinine with the opium.

Dr. Corrigan thinks this plan of treatment superior to all others, because it shortens the duration of the attack, alleviates the sufferings of the patient, hastens the strength, and prevents the complications of endocarditis, pericarditis, &c., which so often complicate this disease, and are the cause of prolonged suffering ending only in death.

[Note.—Several years ago we had an opportunity of testing the efficacy of this practice, and found it superior to every other. Large doses of opium were

at first given, not with the view of curing the disease, but of alleviating the intense suffering under which the patient laboured. Since then we have employed it in several cases, and always with the most marked benefit; the disease seldom lasting beyond a fortnight, and being much alleviated during the whole course of the treatment.—*Ed. Med. & Surg. Journ.* Jan. 1840, from *Dublin Journal of Med. Science*, Nov. 1839.

16. *Saline Enemata in Cholera*.—The *India Journal of Med. and Phys. Sciences*, (Aug. 1839) contains some strong testimonials from several surgeons, extracted from the *Madras Quarterly Medical Journal*, in favour of warm Saline Enemata in the treatment of Indian Cholera. This treatment was adopted at the suggestion of Dr. MURRAY, Deputy Inspector of Army Hospitals at Madras. The ingredients used are common salt one ounce; carbonate of soda or potash one drachm; water as warm as the patient can bear (190° Fahr.) one pint. To be repeated every half hour, hour or two hours until reaction is excited, and the pulse rises to a satisfactory degree of strength.

"Of the *modus operandi* of this remedy," says Dr. Murray, "I am ignorant. Its action is peculiar, however, and is first apparent in its allaying the spasms and vomiting, in increasing the volume and diminishing the frequency of the pulse, restoring the natural appearance and temperature of the skin, and renewing the secretions.

"This effect I have seen follow its exhibition, after the pulse was imperceptible at the wrist and the other symptoms alarming, without the assistance of any other medicine. No febrile excitement followed, neither was there any secondary disease developed upon the restoration of the circulation, which leads me to think that the disease is not essentially one of inflammatory character, seeing that in the reaction after collapse induced by extensive burns and scalds, there is violent inflammatory excitement; and if cholera consisted in abdominal inflammation, I should imagine that the repeated use of hot stimulant injections would rather develop it; but these, along with bitter laxatives, and an occasional mercurial, I have often found sufficient to complete the cure. The last case I had was in a drunken European gunner. When I first saw him, he had vomiting, his pulse was almost imperceptible at the wrist, his skin was quite cold, he had cramps, and his voice was a whisper. The *Hot Saline Enemata* were used, and the pulse became stronger, but remained frequent (190); warmth soon returned to the skin, and the vomiting and cramps ceased; but no natural secretions appeared. Mercurial purgatives were therefore given, and the enemata intermitted. He again became cold, and the enemata were resumed and continued till the pulse rose. Calomel, opium, and castor oil were then given, and the enemata again intermitted; but still no natural secretions appeared, the pulse again sunk in strength, at the same time that it increased in rapidity (137), and the coldness of the extremities returned. This was now 48 hours from the time of his admission; and late in the evening. The saline enemata alone were ordered to be persevered in during the night, and in the morning I found that the secretions had become restored, and that he had had several copious yellow feculent dejections; and after this his cure was soon complete. I have tried, and seen used most other medicines of the Pharmacopœia; but, in the advanced stages of this disease, their action appears to be merely mechanical—the larger the bulk of the dose, the sooner it is vomited. After collapse my sole trust is in the saline enemata; and this feeling of confidence in them is indescribably cheering to me.

17. *Incontinence of Urine*.—We extract the following interesting remarks on this subject from a paper by Dr. LEMMAIR in our esteemed contemporary, the *Dublin Journal of Medical Science* (September 1839). "Incontinence of urine generally depends on a more or less development of three agencies. First in frequency and generally in date, may be mentioned an irritation of the parts about the neck of the bladder, to which the incontinence attendant on calculus, disease of the prostate gland, fungus, &c., may be attributed, but which may

also exist independently of such causes as a primary affection. Sometimes the irritation is confined to the part of the bladder immediately behind the prostate gland, where the gland by its projection within the cavity of the viscus forms a pouch; and in these cases incontinence of urine is often the only symptom that attracts notice. In other instances the prostatic urethra partakes of the irritation and the patient presents symptoms common to other diseases, among the rest irritability of the seminal vessels (after puberty) and frequent discharges of their contents. The involuntary evacuation of the urine and semen during sleep, seem indeed to be dependent on the same cause, and referable to whatever produces irritation in the remote part of the urethra. Thus both are attendant on the morbid state of this portion of the passage, so well described by Mr. Abernethy.

"The second cause, or rather aggravator of incontinence of urine depends on the habit which the parts acquire of discharging the contents of the bladder when the control of the will is removed, as during sleep; and in many cases of powerfully exciting the inclination during the day on the accumulation of the smallest portion of the usual stimulus; thus causing diseases designated by the terms "irritable bladder," or "irritable urethra," but which are in general confined to the part where the viscus unites with the canal. We often find, that in the day time, the patient is perfectly free from annoyance and able to retain his urine, a circumstance that proves the frequent independence of the disease of any paralytic affection. Its spasmodic nature is proved by the influence of an opiate at night in preventing the occurrence, and by the fact that where a ligature* is applied so as to compress the penis, the patient often seems to those appointed to watch him to suffer great agony during sleep, while the portion of the passage beyond the ligature is found to be distended by the urine forcibly driven against the obstacle.

"Thirdly—A more or less paralytic state of the neck of the bladder, which is sometimes the cause, is also occasionally the consequence of continued incontinence of urine. Thus incontinence and retention often alternate, especially in females.

"These three causes, or aggravators of incontinence of urine—local irritation, the habit of involuntary evacuation, and debility, must be attentively considered and the proportionate share of each in the disease duly estimated, before any attempt to treat it on scientific principles can be adopted. In general the above is the order in which these causes arise, and in protracted cases they are usually all developed. Thus Sir C. Bell's plan of causing the patient to lie off the back during sleep, is well adapted to effect a cure in recent cases, and as accessory thereto in others. It ought therefore to be had recourse to in every case. Children can be easily subjected to the requisite restraint by a proper arrangement of the bed apparatus; and adults are so anxious to get rid of the infirmity, that they willingly lend their aid by keeping themselves in the proper posture.

"Where evidence is afforded of irritation and tenderness about the prostate gland leeches may be applied there by means of Dr. Osborne's apparatus, or of a small and smooth gorget. Suppositories of opium, hemlock, and hyocyamus may also be used. The urine must be kept as far as possible in a neutral state, not only by the use of acids or alkalies, according to the results of chemical testing, but also by avoiding whatever articles of food are found by experience to give the fluid a tendency either way. In no class of diseases is it more important than in those of the urinary organs to attend to idiosyncrasy, to arrange the habits accordingly, and to regulate the state of the bowels.

"Bark, steel, cold bathing, &c., are frequently had recourse to in *enuresis*, and usually with but little effect; as indeed might be inferred from the rarity of its connection with debility, except in advanced cases. Stimulants have been attended by more fortunate results, and have thus led to an erroneous view of the nature of the malady. The reason that stimulants succeed, seems in most cases

* This practice has been adopted by army surgeons in order to distinguish feigned from real *enuresis*.

to be similar to the principle on which Mr. Abernethy founded his practice namely, that where morbid irritation exists, it may be subdued by stimulus or counter irritation even applied to the diseased surface; provided care be taken to duly regulate the amount, to render it slight at first, and to increase the artificial as the morbid irritation subsides. In this way cubebs, buchu, &c., probably act. The best medicine of the kind is however the uva ursi. The patient may take half a pint of the decoction daily, and before each dose two pills formed of the resin of copaiba. Where the disease is of long continuance, and attended by difficulty of retaining the urine during the day, the twelfth of a grain of extract of nux vomica may be added to each pill, and increased gradually to three times the quantity, if no unpleasant symptoms should be produced by its use. The principal efficacy of blisters to the loins and sacrum is probably attributable to the absorption of the cantharides, and their specific action on the urethra. Thus the tincture of lytta, taken internally, forms an excellent substitute for the copaiba pills, when the latter begin to lose their effect, especially in those cases where the seminal vessels partake of the irritation. The patient may commence with half a drachm daily, and increase by one-half, till slight ardor urinae is produced when the doses ought to be diminished.

"Desault treated cases of this kind by means of a bougie, or even by retaining a flexible catheter in the bladder. The practice was nearly similar to that of Mr. Abernethy although the principle was somewhat different. I have frequently observed much advantage to ensue from the urine being retained some time before going to bed, and being then carefully drawn off by the catheter. Not only the principles of Desault and Abernethy are thus acted on, but also a considerable effect is produced by the voluntary restraint of the evacuation, and by its subsequent accomplishment without any counter-exertion of the parts. Indeed in many cases of obstinate *enuresis*, the general health is so good, and the disease is so purely local, that local means form the only treatment we can employ with hopes of success, and of these, *injection of the bladder* unquestionably, holds the first place.

The efficacy of injection of the bladder, in incontinence of urine, seems to depend on several circumstances—first, when water is injected of the temperature of the blood, it produces a sedative effect on the irritable surface, after the first impression of a foreign fluid has subsided—secondly, when at a subsequent stage the water is used cold, it produces probably a tonic as well as stimulating influence, and this at the proper period of stimulants—thirdly, the fluid dilutes and thus removes the irritating portion of urine which sometimes stagnates in the pouch at the neck of the bladder—fourthly, the bladder acquires, during the operation of injecting, the habit of resistance, by which it is enabled at other times to withstand the impulse to evacuation.

Injection of the bladder has fallen into disrepute with many practitioners, on account of the great principle that ought to influence us in stimulating irritable parts being neglected—namely, so to adapt the artificial irritant to the morbid irritability that the irritation produced shall be moderate in amount. It hence follows, that where there is much irritation already, our stimulus must be of the gentlest kind, and that our treatment can be active only when the disease verges on indolence. This treatment requires accurate examination of the constitutional peculiarities of the individual, of the progress of the disease, and of the effect produced by stimulants. In short our treatment must be *tentative*.

The patient ought to be somewhat accustomed to the introduction of instruments before injection of the bladder is attempted; and I have already mentioned the utility of such introduction as a part of the treatment, independently of it being preliminary to injection. The water ought to be injected through the catheter in its flexible state, whether introduced with or without the stylet. An inflexible instrument conveys every motion of the apparatus, or of the operator's hand to the urethra, and thus proves a source of irritation. The double barrelled silver catheter is indeed better adapted to washing out a dead bladder than a living one. A stop-cock should be attached to the flexible catheter after introduction, to which the injecting syringe is to be fitted so as to slide off and on

either for the purpose of allowing the fluid to escape, or for that of injecting a further quantity of water. A syringe capable of holding about five ounces is very manageable; but the small syringes, used as stomach pumps, produce too much irritation by their jerking movement, and a plain syringe of the size I have mentioned is the best. The piston ought to slide smoothly and be moveable by the finger and thumb. Of course the syringe ought to be perfectly clean, so as to avoid the risk of introducing a foreign body. An elastic gum bottle can scarcely be rendered sufficiently clean for the purpose.

It is not necessary that the water should be distilled. It ought, however, to be previously boiled, and poured carefully from the sediment. On the principle that has already been mentioned, the water ought to be blood warm at first, and, as irritation diminishes, its temperature should be lowered gradually to that of the atmosphere. The patient can seldom bear the injection of more than four or six ounces at first, and even this quantity must be thrown in slowly, the operator checking his hand the instant the patient complains of any uneasiness, or that the slightest impediment is felt. If the piston be pressed further under these circumstances, and before the resistance has had time to subside, the bladder is excited to spasmodic action, and the fluid must be allowed to escape. If the patient can retain the fluid without inconvenience, it may be allowed to remain and be discharged at his leisure in the ordinary way.—If it cause any uneasiness a part, or even the whole, must be allowed to run off by the tube. No general rule can be laid down as to either the temperature or quantity of fluid or the time it should be retained, further than that the quantity ought never to exceed a pint, and that every thing should be regulated by the consideration of not causing pain to the patient.* If pain be produced the operation will do more harm than good. A similar rule applies as to the frequency of injection, which may vary from once per week to once daily. When the patient has become habituated to the operation it is a very good plan to cause him to retain the urine in the evening as long as he can, then to draw it off and inject water; and finally to draw off the water by the catheter at bed time. In this way the beneficial agency of the operation is perhaps brought to bear in the most effectual way.

Incontinence of urine in the female sex, depends frequently on causes not to be influenced by the practice here detailed; it may however prove valuable as a palliative. In one case of a very obstinate nature, some years ago, it proved highly beneficial; but the patient ceased to be under my care, before I could judge as to the probability of a cure being effected. Injection of the bladder is indeed to be understood from the preceding remarks, as only a part of the treatment of *enuresis* in either sex; and by no means to be had recourse to indiscriminately, or at once in every case, or to be persevered in when the aggravator of irritation. Like other remedies it will often act better if laid aside, and renewed on a future occasion. It is highly commended by Sir Charles Bell, as a palliative in incurable diseases of the bladder and calculus; and I fully concur with him; not only as to its value in such cases, but also as to its efficacy as a method of cure, (especially when aided by other remedies,) in those anomalous and yet tractable affections, which so often simulate these diseases. I make this assertion however with the qualification, that the aforesaid rules and limitations be borne in mind, both in the adoption or continuance of the practice and in the mode of performing the operation.

18. *On the Employment of Sea Salt (Chloride of Sodium) in Pulmonary Consumption, Scrofulous affections, &c.*—M. ANEDÉE LATOUR was first induced to give

* An operator who adapts his hand with delicacy to the feelings of the patient, pressing gently when resistance has ceased; and suspending that pressure when an obstacle is felt, or perhaps allowing some of the water to escape, will, even during the first operation, be able in some cases to insinuate twelve or fourteen ounces into the bladder, while another is obliged to relinquish the attempt, after the rude and painful injection of two or three ounces, which the patient is forced to discharge at once.

a trial to this remedy in phthisis, from its reported efficacy in preventing or curing pulmonary complaints among the lower animals. A great mortality prevails amongst the apes and monkeys confined in menageries, chiefly from pulmonary complaints; and the proprietor of a menagerie found, that by the free use of sea salt, he was enabled to preserve these animals in health for seven or eight years; and, even after a cough had manifested itself, the administration of the salt was followed by a rapid cure.

M. Latour relates three cases in the human subject, in which the administration of salt appears to have been followed by the happiest results. In one of the cases, the disease had gone so far, that there was distinct cavernous rattle with pectoriloquy, muco-purulent and purulent expectoration streaked with blood, great emaciation, hectic fever, &c. and yet the patient made a perfect recovery at the end of a few months, the sea salt having been given uninterruptedly for sixty days.

M. Latour directs a particular regimen to be followed during the treatment.—The aliment should consist almost exclusively of beef or mutton grilled or roasted, of good rich soups, or animal jellies. The patient should partake of these in small quantity at a time, but often, and should drink a little good old wine, diluted with water. Every fine day, when the sun shines, and during its warmest period, the patient should take gentle exercise in the open air; and his chamber should be well aired twice or thrice a day. Flannel is recommended to be worn next the skin.

The mode of administration of the salt is as follows: Half a drachm to a drachm of the chloride of sodium is administered daily, either in a glass of beef tea, or in some pectoral infusion, or if this should excite cough, it may be given in divided doses made up into bread pills, drinking a little beef tea afterwards. It is best to commence with small doses, as the sudden introduction into the system of such a powerful stimulant, is apt to be followed by congestions of blood in the digestive organs or lungs. A few cresses are recommended to be eaten once or twice every week, after having been well sprinkled with common salt, but no vinegar or oil is allowed with them. To relieve the pains in the chest, and the burning sensations of which the patient complains, instead of the usual pectoral drinks he prescribes the following: Carrots are to be well boiled in a moderate quantity of water; they are then to be well beaten, and passed through a sieve. The fluid which passes through is then mixed with fresh milk, sweetened with a small quantity of sugar, and flavoured with orange-peel. This compound the patient drinks at his own discretion. In general some thirst is at first caused by the administration of the sea salt, and for this M. Latour directs a weak infusion of gentian flavoured with orange-peel. *Edin. Med. & Surg. Journ.*, from *Gaz. des Medecins Practiciens*, 1839.

19. *Case of Scrofula cured by Chloride of Sodium.*—M. A. LATOUR adduces the following case in illustration of the efficacy of sea salt in the cure of scrofula.

A girl, 13 years of age, of lymphatic temperament, suffered, for more than a year, under scrofulous symptoms; the sub-maxillary ganglia were greatly enlarged, and the upper lip was the seat of an extensive scrofulous ulceration, for which a variety of remedies had been tried during eleven months without benefit.

On the 9th of April, a drachm of sea-salt was given in soup, and ordered to be continued daily. The sore was washed with salt-water, and the diet was confined entirely to animal food. The re-action produced by the salt was so great that the dose was diminished by one half, and then continued at that dose. The child took frequent exercise in the open air. Towards the middle of May the ulcer was healed, and in fifty days a complete cure was obtained. M. Latour recommends that the salt should be given in flour, made up in the form of a little French roll.

Thus a drachm of salt, dissolved in a small quantity of water, may be mixed with four ounces of flour. Children will readily eat one or two of these rolls in the day.—*Lancet*, from *L'Esperance*, Jan. 9, 1840.

20. *Ileus cured by Injection of Air.*—Several cases illustrative of the value of the injection of air, in the treatment of ileus, have been given in this Journal, and the following from a recent Number of the *Medicinische Zeitung* (No. xxx. 1839) may be adduced as confirmatory of the same fact.

A cuirassier, who suffered occasionally from colic, had a very severe attack in the beginning of August, 1838, in consequence of having eaten very freely of raw bacon, and afterwards drinking cold water. Vomiting ensued, but without relief to the pains, which continued to return in the umbilical region with considerable violence. Symptoms of decided enteritis followed; the vomiting became more severe and fecal; and the obstinate constipation of the bowels could not be overcome, even by the administration of pure mercury. In this state a quantity of air was thrown into the large intestines, and copious evacuation of the bowels followed with instant relief of all the symptoms, the constipation having lasted for eleven days.

21. *On a Peculiar Affection of the Uvula.*—Mr. EDWARD THOMPSON describes, in the seventh volume of the *Trans. Provin. Med. and Surg. Association*, under this title, an affection consisting of an elongation of the mucous coat of the uvula produced by the effusion of lymph (serous fluid) into the submucous cellular tissue; this elongation sometimes going to the length of two inches. The fluid contained within the expanded mucous coat is of a light amber colour, and so pellucid that the handle of a tea spoon is readily seen if placed behind it. The body of the uvula itself appears slightly enlarged, and of increased redness, as well as the palatine arches; but the tonsils are not usually affected. He considers the alteration to be the result of active inflammation of the uvula.

The attendant symptoms are those of simple sore throat in the first instance, but afterwards a huskiness of voice, with occasional brief loss of it, are remarked. Soon a distressing feeling of suffocation comes on, and, as the elongation goes on, the patient runs great risk of being suffocated from the pendulous portion passing into the larynx. This in fact is the chief danger, and the patient sometimes falls down with every symptom of suffocation. When the throat is examined, the pellucid elongation is very apt to be overlooked, as the extremity of the body of the uvula is seen red and somewhat swollen. The treatment is very simple when the malady is discovered; a simple incision with the lancet, or a cut with a pair of scissors, or even entire removal of the pendulous portion, if large, being all that is required. The membrane usually collapses after the removal of the fluid, and a very small opening is sufficient in most cases for its discharge.

[We have seen several cases of this affection. The mucous membrane is prolapsed from the body of the uvula, like a glove partly drawn off from a finger, and the space is filled with serum. It is a dropsy of the part. We were once called up at night to a supposed case of croup in a lady, who was suffering from this affection. When recumbent in bed, she was seized with the most threatening attack of choking and difficulty of inspiration, with cough not unlike croup. Whilst sitting up, she was exempt from these attacks, but they returned again on her lying down. An examination of the throat showed the cause of the difficulty. The elongated uvula, doubtless, at times descended into the glottis, and caused a spasmodic closure of the part and the attendant symptoms. The excision of so much of the membrane as is prolapsed beyond the body affords relief.]

SURGERY.

22. *Use of Ergot to excite the contractions of the Urinary bladder in order to promote the expulsion of Calculi.*—M. GUZMANN has published in the *Annales de la Société de Médecine de Gand*, two cases in which he has administered ergot with

the greatest advantage, to effect the expulsion of the fragments of calculi after the operation of lithotomy.

The first case was that of a man seventy-two years of age, whose limbs had long been very feeble, and who was subjected to lithotomy in the infirmary of Bicêtre. He had several small calculi which were readily broken up at four operations, but notwithstanding the injections which were employed, he passed but very few of the fragments. With the view of giving tone to the bladder, M. G. ordered twenty-four grains of ergot, to be taken in three doses during the day. No effect was produced, but the next day the dose having been increased to 30 grains the patient experienced frequent desire to urinate, followed by pain in the hypogastric region, pricking in the limbs, and slight derangement of vision. After using the medicine for five days, this old man began to pass fragments of calculi, and during twenty-four hours three times as much calculous matter was discharged as during the whole previous period subsequent to the operation. When fragments ceased to be discharged, a fifth operation was performed and several calculi broken, but none of the fragments were discharged the following day. The ergot was then again given and with the same happy effect.

The second case is so similar to the first that it is unnecessary to give the details.—*Journal de Med. et de Chirurg. Prat.* November, 1839.

23. *Epilepsy after an external injury cured by Trephining.*—Mr. CLARK of London successfully treated, several years ago, two cases of epilepsy resulting from external injury of the head, by the use of the trephine, and three cases of the same description have been related by Professor Dudley of Lexington, in which he employed the same measure and with an equally fortunate result.* To these we are now able to add two cases more, cured by operation, one related in *Filiatre Sobezio*, by Dr. REXEY, the other in *Hufeland's Journal*, by Dr. BOSS.

CASE I. A youth eighteen years of age, had been subject since he was ten years old, to attacks of epilepsy; they had resisted every mode of treatment, and within the last half year had become so frequent as to return almost every week. By falling from a scaffold he sustained a fracture of the frontal bone, and also of the left thigh. For five months he was confined to bed. The wound of the forehead suppurated and the injured bone exfoliated. During the whole period of treatment, there was no return of any epileptic paroxysm; and moreover, the patient had quite lost that stupid air so frequent in epileptic patients, and his intellectual powers seemed to have become altogether invigorated. But scarcely was the wound of the head healed than the epileptic fits returned with fresh violence. A seton however being immediately put in the neck, the disease was checked and finally arrested.

CASE II. A youth received some severe blows on the head from his master, whom he had displeased. After the immediate effects of the injury had passed away, the boy became affected with paroxysms, first of chorea and subsequently of decided epilepsy. The frequency of these paroxysms increased so much, that at length the patient had several of them every day. On examining the head, it was found that there was one spot on the vertex which was excessively tender when pressed upon.

An incision was made from the scalp down to the bone; but no unusual or abnormal appearance was perceived. Notwithstanding this, *Hufeland* recommended that the bone should be trephined. During the very process of perforation, the patient was seized with a fit. An effusion—it is not stated where—and a fissure of the internal osseous lamella were discovered. The patient not only recovered perfectly from the effects of the operation, but never had any return of the epileptic disease.

His health continued quite good for many years; he married and became the father of a healthy offspring. During a period of upwards of twenty years he had only three attacks of an epileptic paroxysm; each of these attacks had been preceded by indisposition, and had been brought on by mental emotions.

* See this Journal for August, 1828, p. 469.

24. Insufflation of Mercurial Powder in the Treatment of Excoriations of the Neck of the Uterus.—M. TROUSSEAU, in a note in the *Journal des Connaiss. Médico-Chirurg.*, states that he has cured a great many cases of superficial ulceration of the neck of the uterus, some of which had resisted cauterisation with the nitrate of silver by the following means: Take of protochloride of mercury and deutoxide of mercury each one part, of powdered sugar thirty parts.—Mix. A speculum is to be introduced into the vagina, the mucus wiped from the mucous membrane with lint and long forceps. From four to twelve grains of the above powder is then to be applied, by insufflation by means of a glass tube a foot long and from three to four lines in diameter. This operation is repeated at first two or three times a week, afterwards every four or five days, and, finally, every eight or fifteen days until a perfect cure is effected.

25. Successful Treatment of Aortic Aneurism by Acetate of Lead. By MM. DUSOL and LEGROUX.—Aortic aneurism has been always considered to be an incurable affection, the only cases of cure known being the result or natural causes. The treatment generally pursued, viz: oft-repeated bleedings and starvation, evidently increase the serosity or watery parts of the blood, diminish its coagulability, and prevent the formation of those fibrous clots on the formation of which the cure depends. Dupuytren was amongst the first who recommended and employed the acetate of lead in this disease, and his success induced a few other practitioners to give it a fair trial. The results of these trials MM. Dusol and Legroux have laid before the public. Three cases are recorded at length, but the symptoms and treatment are so similar in all that one will suffice as an example.

Pecheur, 37 years of age, was admitted into the wards of M. Dupuytren in the Hotel-Dieu, on the 19th of May, 1829, with a pulsating tumour on the upper and right side of the sternum. Three years before, when lifting a heavy piece of wood, he experienced a sudden attack of pain with difficult respiration in the right side of his chest. He continued to work, however, for fifteen months, but the oppression in the region of the chest augmented, and was attended with violent headach, acute pain in the right shoulder, and right side of the neck, and along the course of the vessels of that region. For this he was bled, but without much relief. After a few months, a tumour appeared on the thorax, which gradually augmented in volume till it acquired the size of an egg, when it became stationary. In proportion as the tumour augmented in volume externally, the dyspnoea diminished; but its recurrence forced the patient to apply for relief at the hospital. The pulsation of the tumour was perfectly synchronous with that of the pulse; the skin which covered it was red and stretched. There was considerable cough and much dyspnoea, and the patient was obliged to maintain the sitting posture. There was facial congestion, difficult deglutition, and frightful dreams, but the appetite was pretty good, and the bowels were regular. Blood-letting to the extent of seven or eight ounces having afforded no relief, M. Dupuytren ordered two pills, each containing one grain of the acetate of lead. On the following day, and every day after, he took six pills; and from this moment amelioration of all the symptoms took place, so that by the 1st of June the tumour had almost completely disappeared, and the other symptoms were much relieved.

The number of pills was gradually increased to ten daily, and compresses dipped in a saturnine lotion were applied over the tumour. This treatment was continued till the 29th of June, when it was discontinued, from its exciting nausea and vomiting. It was again renewed on the 4th of July, and continued till the 19th, when the patient left the hospital, feeling himself quite well.

The amelioration in the three cases related was so remarkable and rapid, that it cannot fail to induce similar trials to be made in this country. Operations on the larger vessels near the heart for the cure of aneurism have very generally been unsuccessful, and any thing which could give a chance of life, particularly without undergoing the danger of an operation, should be eagerly

adopted.—*Ed. Med. and Surg. Journ.* Jan. 1840, and *Archives Générales de Méd.* 1839.

36. *On the Treatment of Varix of the Inferior Extremities.* 1. *By Pins.* 2. *By Caustic Potass.* 3. *By the Combination of these means.* By M. BONNET, First Surgeon of the Hôtel Dieu of Lyon.—In 1834, I commenced, says M. Bonnet, to study the subject of the radical cure of varices. In the following year, I employed pins in sixteen cases, in which the veins were in relief beneath the skin, and caustic potass in two cases of females, in which the dilated veins were lost in a large quantity of fat. The last two were cured, as well as all those who were treated with pins, and who were in such a condition as to render a radical cure certain. Both methods appeared to me equally useful. But as hemorrhage had occurred through the eschars at the time that the caustic had opened the veins, and as no serious accident had followed the use of pins, I came to the conclusion that the operation by pins was to be preferred. But I determined to watch the progress of these cases; and the consequence was, that I was disappointed in the effect of the pins. All the patients whom I saw again, after having remained well during a time varying from one to six months, were reaffected with varix, with as much intensity as before the operation, and this not only in the secondary divisions of the veins, but in the trunk of the saphena, on which the larger number of pins had been applied, and where it appeared that the obliteration would be permanent. In two cases treated by caustic potass, there was no return of the disease: one of these was seen fourteen months after the treatment, the other several years afterwards. From these facts I was led to infer, that the pins produced but a temporary obliteration; but that caustic potass determined a permanent closure, its use, however, being attended with risk of hemorrhage. I considered, therefore, that if I placed pins at intervals upon the saphena, and canterized the vein between them, I should obtain a temporary obliteration by the pins, such as would prevent hemorrhage, and a permanent obliteration by caustic, such as would effect a cure. I employed this treatment on nine patients, in 1837, but these cases I never saw again. But, in 1838, I treated a man in whom the ulcerated varicose veins gave rise to abundant hemorrhage. I had lost confidence in pins, and found the combination of pins and caustic too complex. I had, therefore, recourse to caustic alone, believing that bleeding might be controlled by compression and position. The result of the practice, in this case, having justified my expectations, I resumed a practice, which I immediately employed on a new series of twelve cases, the course of which more and more confirmed me in the idea, that the treatment of varices by caustic alone is, of all the methods which I employed, the most simple in its application, the least uncertain in its effects, and that which secures the most complete and the most permanent cure.

Before further considering the question of treatment, which is the main object of this paper, I would notice a fact in morbid anatomy relative to varices, and a symptom from which their importance and the effects of treatment upon them may be inferred. I speak of those tumours which stand in the same relation to veins that spontaneous aneurisms do to arteries, and of the undulation which may be communicated to the blood in varicose veins, in a contrary direction to that which happens when the valves are entire, and the blood takes its normal course.

Varicose Tumours analogous to Spontaneous Aneurisms.—I removed one of these tumours from the course of the internal saphena vein; it contained a quantity of liquid blood, with soft and blackish clots; its fibrous walls were perfectly smooth on their internal surface, and its cavity communicated with that of the vein by an opening, three or four lines in diameter, which surrounded the small portion of the vein which I had detached. This tumour was like an aneurism; its walls were continuous with those of the vessel on the side of which it was situated, and the cavities of the one and of the other communicated by a narrow aperture. I have since met with this affection in two instances, and each time on the crural portion of the internal saphena vein. On persons

sing one of these tumours, the blood was made to flow backwards in the dilated vessel, and on placing the hand upon the other, a distinct pulsation was felt, which pulsation was also visible. This reflux, this pulsation, seems to me to be the distinctive character of the tumours; because it shows that the fluid contained in them communicates freely with that in the veins. This form of varix has been very little mentioned by authors. The two cases just mentioned were treated simply by passing a pin through the bloody mass: it was secured by the twisted suture, and not removed, in either case, for eight days. The blood began to coagulate on the second day; on the eighth, the swelling had become hard, and in about a month it was very hard, and of the size of a small nut. This I regard as a successful issue of the treatment of these tumours by means of pins. The undulation of the blood caused by percussion of varicose veins should be very carefully attended to, both as a mean of judging of the difficulty which may attend the radical cure of varix, and especially to ascertain whether or no, when pins have been employed, they have been employed properly; for if the pins properly compress the opposite sides of a vein, the undulation of blood stops at the place so compressed. This sign should also be attended to at the conclusion of the treatment, as a mean of judging if the treatment requires to be renewed.

Treatment of Varices by Pins alone.—Velpéau, Davat, Jobert, who have written on the treatment of varices by pins, have not specified the cases in which they necessarily fail, and in such cases as failure does not happen, to what extent the cure is permanent; nor have they insisted on the principles on which this treatment is founded. These defects it is my intention to supply.

In the treatment of Varices, it is necessary to obliterate the veins in several points separated from each other by short intervals.—The necessity of this is admitted, depending, as it does, on the numerous anastomoses of the venous trunks. It is easy to find, in various works, instances of continuance or recurrence of varix, after the obliteration of a vein in one place alone, whether this obliteration was spontaneous, or artificially effected. On the other hand, in addition to written evidence of an opposite character, all the observations which I have made on the obliteration of veins, either by pins or by caustic potash, have but confirmed me in the opinion, that veins should be obliterated in several points. I have always observed, that the coagulation of the blood, and the contraction of the vein, took place only in the vicinity of the obliterated points; that the divisions of the veins distant from those which the operation had rendered almost impermeable to blood, remained almost as dilated as before the operation. I consequently have been in the habit of obliterating at as many points as possible, placing from four to ten pins on the same individual, some on the course of the internal saphena, from three to four inches apart, others at the point of junction, or upon the course of the principal divisions connected with it.

Methods of placing the Pins.—There are three principal methods. That of M. Davat consists in plunging the pin upon the middle part of the vein which is to be obliterated, passing it through from the superficial to the deep part, and again in a contrary direction. When the point of the needle protrudes, it is fixed by means of a thread, twisted as in the twisted suture, and it is allowed to remain until the parietes of the vein, in contact with one another at the divided part, become inflamed and adherent. This plan is easily enough effected by means of common pins, when the part to be transixed takes an oblique direction in relation to the axis of the limb. In this case, after having transixed the vein, the head of the pin being depressed, its point is passed for two or three times behind the vessel, which is again transixed with ease, from within outwards. But when the vein runs parallel to the limb, as is commonly the case in the thigh, it is difficult, without giving an oblique direction to the pin, to pass it properly, so that after having transixed it inwards, the pin may not enter it in coming outwards, but may pass behind it. The method of M. Velpéau consists in passing a pin transversely beneath a vein, without wounding its parietes, securing it afterwards by means of the twisted suture. M. Fricke simply transixes the vein with a pin, and allows it to act as a seton in

the production of adhesive inflammation. The method of M. Davat appears the most efficient of these three: it ensures inflammation, compression, and the contact of the parietes of the vein, in those parts which the pins have divided. M. Davat considers that it is very important to slightly divide the membranes of the vein, before putting them into contact. He thinks M. Velpeau's method insufficient, that it simply produces coagulation which may not be durable. He dissected the jugular vein of three dogs, which he had operated on in the manner described by M. Velpeau. In one case the pins were withdrawn on the eleventh day; in the other two cases, on the ninth. In the first case, the vein was thickened for the extent of an inch, a fibrous cylinder occupying its cavity, which was contracted but not obliterated. In the other two cases, the course of the blood was re-established, the veins being simply thickened. Other experiments of M. Davat show that obliteration depends upon adhesive inflammation, that the cicatrices are durable, and not dissipated with the other effects of the inflammation.

Period during which I have left the Pins in place.—I have never waited for the establishment of suppuration before removing the pins. When the red tumefaction and pain around the pin commenced, I cut the thread, and as soon as the swelling and redness were very marked, and the pain such as to disturb sleep, I removed the pin. The time required for the production of these symptoms varied from three to fifteen days. In one case only, having neglected to take away a pin which caused great pain, and which had produced, on the fourth day, a swelling, the surface of which was somewhat larger than a sixpence, an active inflammation occurred in the upper half of the leg. This was of a phlegmonous character, requiring very active means to prevent suppuration. This, and other cases, induced me to remove the pins before suppurative inflammation took place.

Result obtained by treatment of Varices by Pins alone.—These cases may be thus classed: 1. Varices without ulceration of the vein, without œdema, the vessels being easily visible, and capable also of being felt throughout their whole course. 2. Varices very much folded on themselves, resembling, in this respect, the intestines. 3. Varices accompanied by œdema, and losing themselves in a quantity of fat. Eleven patients belonged to the first class; two of these were more than sixty-three years of age, and were debilitated. The cure was not even momentary, the blood did not coagulate in the interspaces of the pins, and before they left the hospital, the obliteration, the existence of which was known by the stoppage of the undulation, even after the removal of the pins, was completely destroyed. These facts are not astonishing. In advanced life, the blood is indisposed to coagulate, adhesions are indisposed to form; and no attempt should be made to cure varices after the age of sixty years. The other nine were, with one exception, under fifty-four years of age: they left the hospital quite cured; the blood was coagulated in the whole course of the varicose vessels; these were diminished in size, and a very long walk did not cause swelling of the veins. But, of these nine, I saw five again. In two of these, the veins began to enlarge and to become permeable, as soon as the patients resumed their occupations; in two others, two or three months afterwards, and in the fifth, six months after his having left the hospital. One or two months more were required in each case, before the dilatation was as much as before the operation. The patients of the second class were almost completely cured: some few venous branches only swelled whilst walking. In one of these, fifteen months afterwards, the internal saphena and its branches had become as large as before the use of the pins. In the two other cases, in which the veins were very large, lost in a great quantity of fat, and spread in large number over the whole leg and instep, although in one of these I applied twelve pins, and in the other fourteen, which were not withdrawn until from the eleventh to the fifteenth day, only a momentary benefit was obtained. One of these patients was sixty, and the other forty-eight years of age. The same failure occurred in two patients, whose varices were imbedded in fat, and were attended with œdema. Of the twelve patients regarded as cured on leaving the hospi-

tal, the six whom I saw afterwards suffered a relapse, after a longer or shorter period. There were among these some whose veins were most acutely inflamed, and where the cure appeared to be complete.

It is an important question, *How do veins once obliterated become again permeable to blood?*—Phlebitis obliterates veins: 1. By infiltration of serum into their surrounding cellular tissue, and into the substance and on the surface of their proper tunics. 2. By the secretion of organizable matter in the same parts. 3. By coagulation of blood. It is evident that a diminution of inflammation will account for the re-establishment of the current of blood. But M. Davat asserts, that by his method an inflammation is excited, which gives rise to adhesion of the opposed venous surfaces, by a fibrous tissue, and that this adhesion is indestructible, as is shown by experiments on dogs. But it is not certain that the adhesion which takes place in the veins of dogs will also occur in varicose veins. These no longer possess their normal texture; they are changed into a fibrous tissue, having but little disposition to secrete organizable matter, and consequently to contract adhesions; the inflammatory phenomena occur rather in the healthy cellular tissue around than in the substance of the veins themselves. These considerations explain clearly the want of adhesion, and the merely temporary obliterations which, at first sight, appear somewhat unaccountable.

Varices treated with Caustic Potass.—Caustic has been long employed in the treatment of varicose veins; but the principles of its correct application have not been laid down. The following are the rules which have guided me in the treatment of varix by caustic potass:

1. *It is necessary to apply several morrels of caustic potass on the course of the dilated vein, and at a distance of three or four inches from each other.* This is a repetition of the principle already laid down in speaking of the treatment by means of pins.

2. *The caustic potass should only be applied to the veins at such points as these correspond to the muscles.* Other situations than these are unfavourable to cicatrization, and if cicatrization takes place, the ulcers are readily renewed. The situations which I prefer, are,—1, for the thigh, at the height at which cauteries are commonly applied, but a little backward, in consequence of the situation of the vein; 2, for the leg, at the height commonly chosen for cauterization; 3, the middle of the thigh, or the middle of the leg, if three applications should be necessary. In each case, it is supposed that the vena saphena is alone affected.

3. *It is necessary to apply the caustic at least twice, in order to reach the vein.* This supposes, that in order to obliterate the veins, it is necessary to open them by the caustic. All the cases which I have observed, have convinced me that this is a fact. The undulation of blood has never ceased after the first application, which has only implicated the skin and subjacent cellular tissue. The conversion into a hard and impermeable cord has never happened, until after a second application. Would it be better to destroy sufficient at once, or by making two successive applications, to make the second application in the centre of the eschar produced by the first? The reply is not doubtful, if it be considered that it is sufficient to open the vein, and to destroy it to the extent of a few lines, and that any further destruction is useless. A single piece of caustic, which would reach the vein, would make a large eschar of the integument; but with a small piece, twice applied, the part may be hollowed out without extensive destruction of the surface. We should wait three or four days, before applying the second piece of caustic. The plan then is, to make a crucial incision through the eschar, and to insert the caustic into this incision. After the second application, the blood escapes. It is possible, that even a third application may be required to open the vein, but this has always been sufficient. In this way I have applied the caustic, both when I employed it alone, and when I conjoined with it the use of pins. I have employed this treatment in fourteen cases, with different results as it regards the cure of the disease, but always without serious effects.

We pass over M. Bonnat's observations on the cases in which he employed both caustic and pins, because he gives the preference to the treatment by the former alone.

Caustic potass applied over veins does not expose the individual to phlebitis, i. e. to that kind of phlebitis which extends from the part operated on towards the trunk. Of course a certain amount of local inflammation is essential to the cure. In advancing the above proposition, I am supported by the fourteen cases in which the potass was employed alone, and by six others where it was combined with pins. Here are twenty cases, in none of which was the inflammation disposed to pass along the veins, although three or four applications of caustic were made in their course, most of which opened their cavities. The patients were simply confined to bed, taking their usual diet at the same time. General facts are also in support of the opinion which I derive from my experience. These facts show that canterization limits all inflammations which are disposed to extend.

The application of caustic potass is followed by a circumscribed inflammation, and by ulcerations which are slow to cicatrize.—In the cases where several pieces of caustic are applied very near each other, the inflammations which surround each eschar run together, and the consequence is a true phlegmon.

The application of caustic potass exposes to hemorrhage; but this hemorrhage may be easily avoided, if the patient keeps his bed, and if a slight compression is exercised around the limb.—It has been already said, that it is necessary to apply the caustic until a slight escape of blood shows that the vein has been opened. There may be an actual hemorrhage instead. How long should a patient remain in bed, to render him safe from all chance of hemorrhage? This can not be fixed by days, but must depend on the condition of parts. When the vein is opened, and this is known by the escape of a few drops of blood, the blood coagulates beneath and above the perforated part; the vein becomes hard, and percussion communicates no undulation to the blood. These signs, which demonstrate the obliteration of the vein, show that there is no further chance of hemorrhage. Four or five days commonly suffice for the accomplishment of these phenomena. In order to second the effects of rest, a bandage should be applied around the limb, immediately after the application of the second piece of potass. The neglect of this was, in one case, followed by hemorrhage, one hour after the application of the second caustic. But a roller immediately stopped the bleeding. No other patients treated with caustic potass, who kept their bed, and to whose limbs a roller was applied, suffered from any hemorrhage worthy of the name; the effusion of a few drops of blood alone announced that the vein was opened.

In the varices which are limited to the internal saphena and its divisions, and which affect persons within sixty years of age, caustic potass produces a complete and permanent cure.—The fact of the completeness of the cure rests on fourteen cases. Those which are related, leave no doubt of the superiority of cauterization compared with the employment of pins, as a mean of effecting the obliteration of veins. In one case only was there not a complete interruption to the current of blood in the vein.

The cure of varices by caustic potass, or by any other means, should not be attempted when the internal and external saphena veins are dilated.—In the only two cases in which the caustic was applied to varices of both saphenæ, it was observed, that whilst the internal saphena was obliterated, the external saphena acquired an increase in size, and that varices previously but little apparent, became more voluminous, so as to substitute a new disease for that which had been cured. Advanced age, and the thickness of the coats of veins, such as renders their approximation difficult, even with the pressure of the finger, are likewise circumstances unfavourable to the use of caustic potass.

The treatment of varices by caustic potass hastens the cicatrization of ulcers which co-exist with them.—This may in part be explained, by the revulsion caused by the numerous artificial ulcers, and by the cure of the varices.

In what cases should cure of varicose veins be attempted?

1. Whenever varices ulcerate, and give rise to hemorrhage.

2. When varices exist with ulcers so extensive as to require rest of six weeks, two months, or upwards.

Setting aside these complications, I think we should attempt to diminish the swelling by a stocking. If there are no ulcerations, or if these are but little extensive, if they may get well in one or two weeks, it is unnecessary to keep the patient in bed for above a month; this time is necessary for the separation of the eschars formed by caustic potass, and for the cessation of the pain which remains for some time afterwards in the deep ulcerations. In this case, the remedy would indeed be worse than the disease. M. Bonnet concludes the above highly interesting and useful memoir, by an eulogium on the superiority of the treatment therein recommended over every other, and by a prediction that it will gain the credit which it deserves.—*B. & F. Med. Rev.* from *Archives G n rales*, May and June, 1839.

27. *Rigidity of the Lower Jaw—Operation—Cure.*—We find in the *Compte rendu des travaux de la Soci t  Royale de M decine de Toulouse*, by the Secretary-General, M. DUCASSE, the following interesting case. A soldier,  tat. 29, was affected with scurvy, and languished for several months in the hospitals of Africa. He was afterwards sent to France, where his health was completely re-established; but there remained a permanent rigidity of his jaw, so that he could not separate them more than half an inch without intolerable pain. Hence there was great difficulty in mastication and in speaking. After a protracted and fruitless treatment, this patient was admitted into the H tel Dieu-Saint-Jacques of Toulouse on the 15th of March, 1838, a year after the commencement of this affection.

M. DIEULAFOY, after a careful examination, concluded, that the immobility arose from a permanent contraction of the right masseter muscle; the patient experiencing pain in this part when it was pressed upon, and also when efforts were made to separate the jaws. The left side was unaffected. M. D. believing that the accident might be remedied by a division of the muscle, determined to perform such an operation.

He accordingly made a vertical incision through the skin three or four lines long about the middle of the muscle. Through this he then passed a narrow bladed and strong bistoury which was alternately moved from before, backwards and then in the opposite direction, so as to divide the masseter. Immediately after the operation, the rigidity of the jaw was in part relieved, and the patient could open and shut his jaws much better than previously. In a few days the external wound cicatrised, but the motion of the jaw was still limited. It was then found that there existed a band, which extended from the superior to the inferior alveolar processes behind the last molar, and that the anterior fibres of the pterygoid muscle were contracted. These were divided, and the patient was relieved; he could perform with facility all the usual movements of the jaw, and, in a short time, left the hospital cured.—*Journ. de M d. et de Chirurg. l' ral.* Aug. 1839.

28. *Post Mortem Appearances in Prof. SALOMON's Patient, whose Primitive Iliac Artery had been tied.*—Our Number for August, 1838, contains an account of a case in which Prof. Salomon, of St. Petersburg, had successfully applied a ligature to the primitive iliac artery, near the bifurcation of the aorta, for an aneurism of the external iliac artery. The cure was deemed perfect; the tumour almost entirely disappeared, and the free use of the limb was restored. After remaining well for ten months, the patient exposed himself to the cold in the open air during a stormy night, with but little clothing on. Rheumatic inflammation of the psoas muscle was brought on, and, though treated by the most energetic antiphlogistic means suppuration could not be prevented. An abscess formed, and was opened three weeks from the beginning of the symptoms, just below Poupart's ligament. He died shortly after, worn out by the suppuration.

Before examining the body, the abdominal aorta was injected. Inspection

showed that pus was collected along the psoas, beneath the fascia iliaca, and on the outer side of the femoral vessels. The iliacus internus muscle was as it were dissolved by the ichorous pus, and the internal surface of the ilium was exposed. The abscess had formed outside the peritoneum along the outer portion of the aneurism; but the pus had not passed inwards to the femoral ring; at this part there was a fibrous mass which remained from the internal portion of the aneurism. No fibrous clot was found; it had no doubt been already completely absorbed.

The injection had passed into both legs. It was easy to see by the contracted and firmly adherent part of the left common iliac that it had been tied about half an inch below the bifurcation of the aorta. It was converted into a ligamentous cord throughout its whole length. A little of the injection had passed into the left external iliac through the medium of the left internal iliac artery. The maintenance of the circulation was chiefly effected by the very dilated lumbar arteries, whose branches anastomosed with those of the left circumflexa ilii. The lower extremity was also in a great measure supplied with blood through the free communications between the two internal iliacs. The left femoral artery was injected to within two inches below Poupart's ligament. The common, external, and internal iliacs, on the right side, were considerably dilated; and in the left thigh it was chiefly the ischiatic and obturator arteries that had increased in size.—*Zeitsch. für die gesam. Heilk. and Gaz. Médicale*, Dec. 1839.

39. Tumour of the Parotid Gland.—Extirpation. By Dr. BERT.—The patient was an interesting young female of 17 years of age. The disease commenced five years ago by an inflammatory swelling in the region of the parotid gland: an abscess burst, and continued to discharge for some time from the meatus auditorius. This subsided, but the swelling increased, and the abscess then obtained an exit by the parotid duct. On the cessation of this, the tumour rapidly increased, until it acquired such a size as to occasion great deformity and to impede the functions of deglutition and voice, and to be attended with considerable pain; the integuments were perfectly healthy.

Some of the best surgeons deny the necessity of securing the carotid artery, whilst others of equal celebrity advocate the expediency of so doing.

In the case I am about to describe, a ligature of reserve was introduced under the carotid artery.

The operation for extirpation of the tumour was then commenced through the integuments and platysma myoides muscles by two semi-elliptical incisions, extending from the zygomatic process to the inferior part of the tumour, and with a little dissection, the whole extent of the tumour was exposed. The lateral attachments were dissected, and the tumour was laid hold of, and detached from its firm connections, a great part of which was effected by the finger. The hemorrhage was thus far but slight, the few vessels which were wounded being easily secured at the moment they were divided, and nothing of moment occurred, until the dissection was carried to the deep attachments at the base where it encircles the artery. At this point, in an instant was the patient almost deluged in a torrent of blood chiefly from the external carotid. She swooned, and involuntary discharge of urine and feces took place. In a moment the ligature on the carotid artery was secured, which was followed by instantaneous cessation of the hemorrhage. The patient shortly revived from the syncope, and completely recovered; without the occurrence of any subsequent hemorrhage. The dissection clearly exposed, in this case, the posterior belly of the digastricus. The transverse processes of the cervical vertebrae, the mastoid process and meatus auditorius on the one side, and the angle of the jaw with part of the masseter muscle on the other, and the hyoid and pterygoid processes were distinctly felt. The circumstance of the early abscess discharging itself through the parotid duct appears to me diagnostic.

The wound completely healed chiefly by adhesion, and partly by cicatrization, and the girl presented herself to me, some months afterwards, in perfect health.

I was assisted at the operation by Mr. Corbyn, Garrison Surgeon of Fort William.

The structure of the tumour was partly glandular, and partly of an indurated scirrhus character, having several small cysts throughout its substance containing purulent matter. The lobules of the conglomerate parotid were quite distinct, and its figure and superficies entire and well defined. It was examined by Dr. Goodeve, and myself, and I think that gentleman has preserved a preparation of it, in the Calcutta Medical College.

Branches of the portio dura of the seventh pair of nerves were unavoidably wounded, in consequence of which there was paralysis of the muscles furnished by these motor nerves.—*India Journ. of Med. and Phys. Science*, Aug. 1839.

30. *Treatment of External Cancer by Ligature of the Vessels and Division of the Nerves supplying the diseased part.* By M. JOBERT.—Feeling persuaded that the increased afflux of blood and heightened nervous sensibility, which are the consequence of disease, exert a great local influence in cancerous affections, M. Jobert has adopted a new plan of treatment; namely, that of tying the principal arterial branches and dividing the nervous filaments which are distributed to the affected part. He has seen this proceeding followed by a favourable change in the aspect of the ulcers, and by their ultimate cure. He has obtained this successful result in four cases of cancer of the lip, and in one of the tongue.

M. Jobert is of opinion that the vascular system has a much more important share in the development of cancerous affections than the nerves of the part; therefore he considers that tying the arteries will have much more influence in checking the progress of the disease than the division of the nervous filaments.—*B. & F. Med. Rev. from Revue Médicale*, Sept. 1839.

31. *On a New Universal Interrupted Splint.* By ALFRED SMEE, Esq., late Dresser at St. Bartholomew's Hospital.—Compound fractures of the leg, at St. Bartholomew's Hospital, are treated by placing the limb upon a back iron splint, about an inch and a half broad, and of such a thickness that it may be bent to accommodate itself to the limb; it is turned up towards one end, at nearly a right angle, to form a point to which the foot may be fixed by a bandage; at the point corresponding with the heel, there is a hole, to prevent any undue pressure on that part which might give rise to troublesome sloughs. Immediately above this aperture is a piece of iron, about an inch broad and one foot long, which is rivetted at right angles to the principal piece: this is simply to allow it to rest firmly on the bed. Above this attachment the splint is bent to a convexity, to adapt it to the concavity above the heel, and then it is rendered concave to suit the convexity of the calf; again it is convex, to fit into the hollow behind the knee. The whole splint is covered with a pad to render it soft, and, if much discharge is expected, the pad is protected by oil silk.

There is an advantage in this position for most compound fractures of the bones of the leg wherever they may occur; and it is even useful in many serious comminuted injuries. In these cases the powerful action of the muscles of the calf has a tendency to throw the two ends of the bone forward, especially when the fracture is about the centre of the limb. This bowing is immediately remedied by placing it upon the splint just described. In these cases the leg is further fixed by two flat wooden splints, one on either side of the limb, extending from the foot to above the knee, and these are also covered with a pad; the whole is then confined by straps with buckles.

In compound fractures, where the bone is separating, or where ulcerations or gangrene is taking place, it is often necessary to apply a poultice, the water dressing, or various lotions, such as the chloride of soda. In these cases the interrupted splint is used on the side at which the ulceration is taking place; it is formed of two pieces of wood, united by a strip of iron bent at two right angles, so that the two pieces of wood have an interval of a dimension suitable to the extent of the sore.

Now, in these interrupted splints, are three variable elements; first, the gap requires to be of different extent in different cases, or even in the same case at different periods; secondly, the wood below the gap requires to be longer, or shorter, according to the situation of the sore; and, lastly, the length of the piece of wood about the sore is required in the same way to be altered. These circumstances vary to such an extent in different cases, that it is customary, at St. Bartholomew's Hospital, to send to the carpenter to have a new splint made for each accident.

To obviate the delay and inconvenience attending this proceeding, a splint, adapted to meet these exigencies in every part of the leg, was devised.

The wood of which the splint is formed should be hard, and of a thickness sufficient to make it quite firm; two inches and a half will be found most convenient for its breadth. In order that the two pieces of wood on each side the gap may be of different length, pieces are united at their edges by moveable joints. This mode of junction should be very firm, and requires particular description. A piece of brass of the same breadth and depth as the wood is to be taken; in this, four holes are made to allow the brass to be screwed firmly to the edges of the wood. The pegs, about an inch long, and of a thickness sufficient to give strength, are rivetted in the brass, so that when the brass is fixed on the edge of the wood, these two pegs project. Another piece of brass, of exactly the same size as the last, is now to be procured, and, in a situation corresponding to the pegs, two holes are to be bored in which the pegs can fit with accuracy. Four other holes are now to be made for the purpose of screwing it firmly to the edge of the wood. The situation of these pegs, with their corresponding holes, is important, for in every joint they must be fixed exactly in a similar position, and to effect this the holes must all be made to a gauge, and the pegs rivetted with like accuracy. By this contrivance we have a number of similar joints of such strength, that pieces of wood can be firmly united by their edges. The difficulty of adjusting these pegs and holes to each other exactly, is obviated by taking a small piece of twine and putting it into the hole, which will be found to make the junction firm.

Having considered the breadth and width of the wood, and the joints by which the pieces are united, the next point is to mention the length of each separate piece, which should be of such a size that the greatest variety of adaptation should be obtained with the fewest possible joints. Four pieces of wood are first to be taken, each $1\frac{1}{2}$ inch long, and 3 broad, and $\frac{1}{2}$ deep; these on one edge are to have one part of the brass joint fixed; the other edge is to be rounded off. Two of these pieces are to have the brass with the pegs fitted on, and the other, the two holes in which these pegs fit. These pieces form the four-ends of the wood-work of the splint; one piece being applied at the upper part of the splint, another at the upper end of the gap, or interval for the sore, the third at the lower end of the interval, and the last at the end nearest the foot. On the two which form the boundaries of the gap, the brass pieces for regulating it are fixed.

Thus it is manifest, that having these four pieces of wood, the wood would be three inches above the interval, and three inches below it. Now, other pieces are wanted, to fit on in such a way that each part may be extended one, two, three, four, five, or more inches, according to circumstances, or, in other words, we want pieces of wood so that two arithmetical series in inches should be formed. Now, advantage is taken of the properties of the geometrical series, the sum of which formed an arithmetical one; but though we want two arithmetical series to make the splint quite complete, it will be found that for every practical purpose pieces of wood of the following lengths will suffice: Thus they must be + one inch, two inches, three inches, five inches, and seven inches respectively, and, by combining these, great variety can be produced at the part below the gap, which we have already seen, is three inches, may, by the addition of these pieces, be extended to four, five, six, up to eighteen inches, and the part above the gap can be increased in a similar way.

The mode by which the interval is increased, or diminished, is by two pieces

of brass. One of these is about three inches in length, and terminated at one end by a square flat piece, to be screwed into the wood work; the other piece of brass has a similar termination at one extremity, to be screwed on the wood, the rest is circular, and has a bend at right angles, at three inches from the extremity last described; from this bend the brass is continued about eight inches, and is of a size corresponding with the ring in the portion first described. Into this it fits, and by sliding to and fro the aperture is augmented, or contracted, as required, and it is secured in its situation by screwing in the first piece of brass. This mode of adjusting and fastening is similar to that of the ring of a retort-stand on its support.

The splint thus constructed, fulfils every purpose for which it was designed, not theoretically alone, but practically, for its complete strength has been proved in the cases to which it has been applied during the last year, in the wards of the hospital attended by Mr. Lawrence. Its adaptation, as an interrupted splint, to every part of the leg, has been tested, and it can also be used as a simple splint when required.—*Lancet*, Jan. 25, 1840.

39. *Hydrocele of the Neck*.—Those encysted tumours of the neck which have been sometimes designated hydrocele of the neck, although mentioned in the writings of some of the older authors, had attracted little notice, until M. Maunoir of Geneva published, in 1835, his work entitled "*Memoires sur les Amputations, l'Hydrocele du Cou, et l'Organisation de l'Iris*." M. Delpech subsequently narrated, in his *Clinique Chirurgicale*, two cases which he had successfully treated by operation. Messrs. Lawrence, O'Bierne, Heidenreich, Beck, &c. have since published the reports of a few additional instances of this rather rare disease, and have thus contributed to enlarge our knowledge of its true characters.

According to the researches of MM. FLEURY and MARCHESSEAU, in the August Number of the *Archives Générales de Médecine*, there are two sorts of these tumours, which may be distinguished from each other by the difference in their anatomical characters.

The *first* are those which are developed in the actual tissue or substance of the thyroid gland. They are sometimes superficial, at other times deep-seated: they correspond to the cellular or thyroidean serous goitre of Beck and Heidenreich, to the hydrocele of the neck of Maunoir, the hydro-bronchocele of Percy, and the encysted goitre of other writers.

The *second* are developed in the common cellular tissue of the neck, at a greater or less distance from the thyroid gland, and, according to some authors, in the cellular texture of this gland itself. These have been denominated by O'Beirne hydrocele of the neck, cystic tumours by Boyer and Dupuytren, fibro-serous cysts by Delpech, and hygroma cellularis by several German surgeons.

MM. Fleury and Marchesseau have given a very minute description of the anatomical peculiarities of these two sorts of tumours. Those which more properly appertain to the thyroid gland, had already been ably treated of by MM. Andral and Beck.

The other kind, or such as are developed in the cellular tissue, are genuine encysted swellings; the cysts of which are formed by the progressive development of a fibrous tissue, which, as Bichat first demonstrated, exhibits many of the characters of serous membranes. The skin over them does not usually undergo any change, except perhaps when it adheres very firmly to the subjacent cyst; and then it becomes so very thin, from the absorption of all the fatty matter, that the minute blood vessels can often be seen through it. At other times, the cyst is connected with the surrounding parts only by very loose cellular-tissue, so that it remains very moveable. The parietes of the cyst are usually firm, little or not at all elastic, and thickened. The thickness is sometimes remarkable: in one case the anterior wall of a cyst was found to be nearly an inch in thickness. Not unfrequently within their cavity are found laminae of a cartilaginous and even of an osseous formation.

These characters are always the more decided in proportion to the length of time that the swelling has existed. The internal surface of the cyst, when its

aspect is not completely modified by the transformation which it has undergone, exhibits a white, reticulated appearance, not unlike to the inner surface of the ventricles of the heart, or of the urinary bladder in certain cases. This surface is coated throughout with a pseudo-serous membrane, which invests all the ridges and furrows, and which some anatomists have described under the name of internal lamina of the cyst. Its thickness, colour and consistency vary much in different cases: in some it is smooth and of white colour, while in other cases it is more or less red, and resembles a softened mucous membrane. Occasionally pieces of this lamina become detached, and, floating about in the fluid of the sac, have been mistaken for hydatids.

The encysted tumours of the neck have been met with in both sexes, and at almost every period of life: sometimes they are congenital. Their growth is usually very slow; and in most cases no cause can be assigned for their appearance. Occasionally they have been observed to enlarge rapidly after a catarrh, and also after an accouchement.

If allowed to attain a large size, they impede the respiration, and even the deglutition, as well as the circulation in the neck and head.

The fluctuation of their contents is generally more easily perceptible in the earlier stage of the disease—provided the tumour be sufficiently prominent—than when it is more advanced, in consequence of the parietes of the cyst gradually becoming thicker and more resisting. Hence mistakes in diagnosis have occasionally been made by the most experienced surgeons, and cases of hydro-bronchocele have been considered as examples of goitre, or some other solid growth. We may also mention that the tumour may sometimes be mistaken for an aneurism of the carotid artery, in consequence of its communicating the pulsations of this vessel; but a careful examination of the case will generally enable the surgeon to discover that the swelling experiences a lifting up or rising *en masse*, and not those movements of alternate expansion and retrocession, which are characteristic of a genuine aneurism.

With respect to the different methods of treating hydrocele of the neck, authors very generally agree in regarding *puncture* as a mere palliative means, and as one moreover not always free from inconveniences; and they condemn *injection* of the sac, as uncertain in some cases and highly dangerous in others. The use of a *seton* or something analogous, as a canula, tent, &c. appears to be the practice most extensively approved of.

In one of the cases, which occurred to Dupuytren, the sac refilled to its former size within a short time, although a seton had been in it all along; a canula of elastic gum was therefore introduced and left in the lower opening, so as to permit a ready escape to the contents of the sac, and at the same time to allow the occasional injection of emollient and detersive washes.

MM. Fleury and Marchessaux also record a case, in which the same method was adopted with success, after various other means had been ineffectually tried.

In a case, which occurred in a girl 17 years of age, M. Jobert punctured the tumour three times successively, the fluid having re-accumulated quickly after each operation. After the third puncturing, some alcoholised water was injected into the sac, and then a seton was introduced for the purpose of keeping the wound open. At the end of a week, suppuration was but imperfectly established, and there was only a slight serous oozing, when the seton was removed. An elastic-gum canula was therefore substituted for the seton: this was kept in the opening, and gently stimulating injections were repeatedly passed through it. After the lapse of two months, the swelling, which had been of an immense size, was not bigger than an egg; and four months later, all that remained was a small kernel or lump, which was entirely indolent.

M. Flaubert, of Rouen, has published a case which he successfully treated by *incision*—a method which has succeeded in the hands also of MM. Delpech, Morelot, Lemaire, and which an Italian surgeon has in one case combined with the use of the seton.—(*Annali Universali*, Feb. 1838.)

Excision has been repeatedly adopted with complete success. In three cases Beck, after having laid open the tumour by an incision, excised a portion of the

cyst, which was not connected with the thyroid gland. This method hastens the process of suppuration, and does not seem to be attended with any inconveniences, when precaution is taken to avoid wounding the substance of the thyroid gland.

The *extirpation* of the entire sac may be adopted with advantage, when the cyst is small, superficially seated, and not firmly adherent to the thyroid gland, or to any other of the neighbouring important parts.

M. Jobert practised it with success in the case of a woman, 30 years of age, in whom the tumour was of the size of a hen's egg, and was smooth, hard, and so resisting that it communicated no feeling of fluctuation; the wound healed up by the first intention, the twisted suture having been employed to retain its lips together. But we must refer our readers, who may wish to make themselves acquainted with the particulars of the various cases on record, to the original paper of MM. Fleury and Marchessaux, and will now extract only the following conclusions, which they have deduced from their inquiries.

1. The encysted tumours of the neck may be arranged, according to their anatomical position and relations, in two classes—one comprising such as are developed in the substance of the thyroid gland, and the other, all those which are developed in the cellular tissue of some portion of the neck.

2. The *first* set seems to be attributable to the hypertrophy of one or more of the cells of the thyroid gland, and, if so, cannot be regarded as encysted tumours, in the strict sense of the phrase; whereas in the *second* set, the sac of the tumour is a genuine cyst of a sero-mucous nature.—(*Delpech.*)

3. This distinction is important both in a diagnostic and in a therapeutic point of view.

4. The tumours of the first class may be readily mistaken for genuine goitre; and those of the second for chronic abscesses, lymphatic swellings, or aneurismal swellings.

5. Encysted tumours of the neck, whatever be their nature, should never be left to Nature; they always require surgical assistance for their dispersion.

6. Among the various methods of treatment, which have at different times been proposed, that of nearly puncturing, and that of injecting the sac, appear to be the least trustworthy and advisable. The employment of a seton, after a free incision has been made, has been found useful in tumours of the first class, by inducing and keeping up a long and abundant suppuration, and thereby causing a melting down of the hypertrophied and swollen tissues; also in all cases where the cyst was multilocular, by giving a free discharge to the contents, and preventing an accumulation in any of the cells. On the whole, it may be laid down as a therapeutic principle, that the incision of the swelling and the subsequent employment of some means to establish suppuration in the cyst, seem to be the best method of treating almost every encysted tumour of the neck, whatever be its origin or seat.

The complete extirpation of the sac may be recommended when this is not very large nor closely adherent to the surrounding parts.—*Med. Chirurg. Rev. and Archives Générales de Méd.*, Aug. 1839.

33. *Application to Blistered Surfaces.*—Sir BENJAMIN BRODIE employs the following preparation as an application to blistered surfaces when they become irritable and painful; R. Creta pp. Ol. Oliv. āā ʒv; Aq. Ros. ʒij. *Lancet.*

34. *Dislocations of the Humerus and Fractures of the Head and Neck of that Bone.* The last number of Guy's Hospital Reports contains an essay of Sir ASTLEY COOPER, upon dislocations of the os-humeri and on fractures of the head and neck of that bone, which, as being of a practical character, and emanating from one who at the same time that he is the acknowledged head of European surgeons, has devoted himself in a particular manner to the study of luxations, and fractures about the joints, is entitled to especial attention. Since the publication of his last work on luxations of the shoulder, several cases of dislocations on the dorsum scapulae have come to the knowledge of Sir Astley, as also an example of

the post mortem appearances presented in these cases. Backward dislocations of the head of the humerus are, he observes, usually produced by a violent push of some opposing body while the arm is advanced, and probably in these cases the posterior part of the capsular ligament is torn, permitting the escape of the bone upon the dorsum of the scapula and its inferior costa. The principal symptoms which make known the existence of this accident, are a depression below the acromion, a projection formed by the head of the humerus behind the glenoid cavity, which when the elbow is rotated will be found to obey its motions, and the close approximation of the elbow to the side.

The common mode of reduction in such cases, is to fix the scapula and draw the arm outwards from the body, but finding the reduction to be slowly and with difficulty effected by this means, Sir Astley employed the following method with success. The case was one of twenty-three days standing occurring in a gentleman who had received his accident in a scuffle. He says, "I placed the patient upon a chair, and bending his elbow at right angles, I raised his arm, and carried it behind his neck, so as to bring the hand across the back of the neck to the opposite shoulder; then forcing the elbow back, and pressing upon the head of the bone, I pushed it under the inferior costa of the scapula, and it instantly returned into the glenoid cavity." Other means however will succeed; in a case at Guy's Hospital, the patient was placed in a chair with the knee in the axilla, while extension was made by an assistant from the wrist, and the bone was reduced. In another instance, it is stated that Mr. Dunn, easily succeeded by fixing the scapula and extending from the wrist in the usual mode of reducing a dislocation into the axilla. Dr. Physick, we may add, in one instance succeeded in effecting the reduction, by making extension and counter extension in the usual manner, at the same time that the head of the bone was pressed towards the glenoid cavity. The method above described as adopted by Sir Astley, will not always succeed as he shows by a case communicated to him by Mr. Key, which fell under the observation of that gentleman in August last in conjunction with Mr. Whittaker. The patient was a very stout man who received his injury by a fall upon his shoulder. "At first," says Mr. K. "we placed our patient on a chair and while Mr. W. fixed the scapula, I carried the elbow upwards and backwards, in order to throw the head of the bone forwards into the glenoid cavity, but to no purpose. All that we gained by this measure, was a slight advance of the bone and reducing him to a state of syncope. In this state we laid him upon his back; and fixing his scapula by the heel in the axilla, drew the arm downwards; and by extension continued for a minute or two, succeeded in reducing it."

The case in which Sir Astley had the rare opportunity of witnessing the post-mortem appearances after this accident, was that of a person *ætat* 52, who was subject to fits of epilepsy, in one of which, occurring while in bed, his shoulder was dislocated by muscular action alone, it having been well ascertained that he neither fell from his bed, nor struck his shoulder during the fit. Another peculiarity of this case was, that the head of the bone could be by extension drawn into its natural situation, but so soon as the force ceased to be applied, it slipped back upon the dorsum scapulae. Although the patient lived seven years after the occurrence of this accident, he never recovered the use of the limb. The appearances presented on dissection are thus described:—"The head of the os humeri was placed behind the glenoid cavity of the scapula; and it rested upon the posterior edge of that articulatory surface, and upon the inferior costa of the scapula, where it joins the articulation. When the scapula was viewed anteriorly, the head of the os humeri was placed in a line behind the acromion, but below it; and a wide space intervened between the dislocated head of the bone and the coracoid process, in which the fingers sunk deeply towards the glenoid cavity of the scapula.

"When viewed posteriorly, the head of the os humeri was found to occupy the space between the inferior costa and spine of the scapula, which is usually covered by the *infra-spinatus* and *teres-minor* muscles. The tendon of the *sub-scapularis* muscle and the interior portion of the capsular ligament had been torn

at the insertion of that muscle; but the greater part of the posterior portion of the capsular ligament remained, and had been thrust back with the head of the bone, the back part of which it enveloped.

"The supra-spinatus muscle was put upon the stretch; the subscapularis diminished by want of action; and the infra-spinatus and teres minor muscles were shortened and relaxed, as the head of the bone carried their insertions backwards. The tendon of the long head of the biceps muscle was carried back with the head of the bone, and elongated; but it was not torn.

"As to the changes in the bones, the head of the os humeri and the outer edge of the glenoid cavity of the scapula were in direct contact, the one bone rubbing upon the other when the head of the os humeri was moved; and this accounted for the sensation of crepitus at the early period of the dislocation, as there was no fracture. The glenoid cavity was slightly absorbed at its posterior edge, so as to form a cup, in which the head of the bone was received; and this latter bone, and the articular cartilage, had been in some degree absorbed where it was in direct contact with the scapula, as well as changed by attrition during the seven years the patient lived.

"The surface of the original glenoid cavity, instead of being smooth and cartilaginous, was rough and irregular, having elevations at some parts, and depressions at others."

Of Fractures of the Head and Neck of the Os Humeri.—As these injuries often so closely resemble dislocation, as to lead to errors in their diagnosis and treatment, Sir Astley has thought it well to bring together the observations which in the course of his long and extensive practice, he has had an opportunity of making concerning them. These accidents are of three kinds:

1. Dislocations of the os humeri into the axilla, with fracture and detachment of the head of the bone, which is thrown on the inner side of the inferior costa of the scapula. This accident is always the result of great violence to the part, and the signs of it resemble closely the symptoms of simple dislocation of the head of the humerus into the axilla. In order to distinguish it from luxation, it must be recollected, 1st. That the depression of the shoulder is less marked than in that accident, the end of the shaft of the bone filling the glenoid cavity. 2d. That upon raising the arm the head of the bone can be felt in the axilla, though it does not roll upon rotating the elbow; 3d. That a grating sensation, and sometimes a distinct crepitus can be felt from the neck of the bone rubbing against the glenoid cavity. 4th. That the broken extremity of the humerus is drawn forwards towards the coracoid process, but that it is readily pushed back into the glenoid cavity from which it easily again slips forwards. 5. That the arm measured from the acromion to the elbow is shorter than that of the opposite side. In the treatment of this fracture, all that can be done is to bring the broken shaft of the bone, into the glenoid cavity and retain it there, where it will form a useful joint, though some of the motions of the arm will be lost.—To effect this purpose a pad must be placed in the axilla, a clavicular bandage used and the fore arm supported in a sling. Of cases of this nature, Sir Astley has seen, as he believes, many in the living and has dissected three of them, and can consequently describe them as they appeared on dissection as well as give the appearances they present during life. The post-mortem appearances of one of these cases we shall transcribe:

"The deltoid, teres-major, and coraco-brachialis, did not appear altered.—The supra-spinatus was somewhat wasted, as was the teres-minor; and their colour was fainter than natural. The infra-spinatus was put upon the stretch.—The subscapularis passed over the head of the bone, and adhered to its cartilaginous surface.

"The fractured neck of the shaft of the os humeri was seated in the glenoid every other part was entire.

"The head of the os humeri had been broken off; and was found in the axilla, behind the coracoid process of the scapula, and it was strongly united to the inner side of the scapula.

"The capsular ligament had been torn, under the subscapularis tendon; but

the cavity of the scapula, widely separated from the head of the bone; and the broken os humeri formed a new and good articulation with the glenoid cavity, with a capsular ligament over it, which was in part newly formed. A ligamentous matter passed from the broken end of the os humeri to the inner surface of the glenoid cavity of the scapula.

"The edge of the glenoid cavity remained; but its surface was rather ligamentous, than smooth and cartilaginous.

"The greater tubercle of the os humeri had become enlarged; the tendon of the biceps remained in the bicipital groove; and the tubercles were connected with the broken extremity of the shaft of the os humeri, and not with its head."

In the second kind of fracture through the neck of the bone, at the tubercles, the head of the humerus is broken off, but it remains in the glenoid cavity.—This fracture occurs at the anatomical neck of the bone, at the part at which the capsular ligament is fixed, and where in young persons the epiphysis is placed. Fracture at this point is most frequently met with in children, and is usually the result of falls upon the shoulder. The accident, Sir Astley has known to have been mistaken for dislocation; from this however it may be distinguished by the following symptoms: 1st. The shoulder is not sunken as in luxation. 2d. The end of the broken bone is felt at the coracoid process, and this is supposed to be the head of the humerus, but with care the head of the bone can be felt filling the glenoid cavity: 3. By extension the projection is removed, but immediately reappears when the extension is removed: 4. Motion of the shoulder is painful, and the elbow is with difficulty removed from the side. In old persons fracture through the anatomical neck of the bone is comparatively rare. The best method of treatment consists in the application of splints to the front and back of the arm and the use of a clavicular bandage with a pad in the axilla. In a case which occurred to Mr. Tyrrell, he could not succeed in removing the deformity or in keeping the bone in its place, until the arm was raised and supported at a right angle with the side, by means of a rectangular splint, a part of which rested against the side, while the arm reposed upon the other part. An instance of what the writer of this analysis believes to be an example of this accident, very recently came under his notice. The patient was a young man who had fallen down the hold of a ship at Rio Janeiro and struck his shoulder. Great swelling and pain followed, and as the vessel to which he was attached, sailed the day after his accident, no treatment other than that of keeping the arm in a sling, was pursued. Upon his arrival in Philadelphia, six weeks afterwards, the shoulder presented the following appearances. Measurement of the arm from the acromion to the elbow showed it to be shorter than that of the opposite side: the arm could not be lengthened by extension, and the elbow could be brought down in close contact with the side: the shoulder had not lost its natural rotundity; but an irregular projection existed at its upper front part which rotated with the arm. The parts allowed of considerable motion, and there was every reason to believe that a very useful though deformed articulation would eventually be formed.

In the third kind of fracture of the shoulder, the bone is fractured in its surgical neck, viz. between the tubercles and the insertion of the pectoralis major, coraco-brachialis, latissimus dorsi, teres-major and the deltoid muscles. In this fracture there is no depression under the acromion, the head of the bone being in its cavity, but the fractured extremity of it is drawn upwards and forwards under the pectoral muscle. The elbow may be moved more freely in all directions than in the other injuries about the shoulder, though all motion of it is accompanied with much pain.

In the treatment of this case, splints, the clavicular bandage and the pad in the axilla are required, and Sir Astley particularly recommends that the arm be permitted to hang by the side, unsupported at the elbow so as to let the weight be a constant source of extension. G. W. N.

35. *Extirpation of an Encephaloid Tumour of the Testicle weighing nine pounds.* M. Ph. BÖYER, Surgeon to the Hôpital St. Louis, presented to the Academy of

Medicine at their meeting on the eighth of October last, a testicle, converted into an enormous encephaloid tumour weighing more than nine pounds which he had successfully extirpated fourteen months previously. The spermatic cord was healthy; the wound healed in three days and the patient continued in health up to the present time.—*Revue Médicale*, Nov. 1839.

36. *Venereal Excrescences treated by watery solution of Opium*.—M. VENOT, of the Venereal Hospital, Bourdeaux, having been disappointed in the various remedies which he had employed for the treatment of venereal vegetations, determined to try the efficacy of the narcotic lotions, recommended by M. Desruelles. His experiments were most successful, and from them he draws the following conclusions:—

1. The solution of opium should be fresh and concentrated, an ounce of water containing at least one drachm and a half of opium.

2. The white dry epidermoid vegetations do not yield so readily.

3. All cases of mucous vegetations, moist warts, condylomata, &c., are almost certainly cured by the watery extract of opium, especially if employed after general treatment.

4. The local action of the remedy is manifested in the following manner:—the vegetations dry up, become pale, then yellow, brown, and finally waste away.

5. This action, which is evidently poisonous, may extend to the healthy parts and determine certain accidents, against which the physician must be on his guard.—*Lancet*, from *Gazette Méd. de Paris*, Jan. 13, 1840.

OPHTHALMOLOGY.

37. *Case of sudden and temporary occurrence of Presbyopia in a young Boy*.—Dr. JAMES HUNTER has recorded a curious case of this character in the *Edinburgh Med. and Surg. Journ.* for Jan. last. The subject of it was an intelligent boy, 9½ years of age, who had been three years at school, and was very fond of his books. His sight began to fail about three weeks before Dr. H. saw him, and was so much impaired in the course of four days that he could no longer see to read ordinary type with the naked eye. He had never had inflammation or other disease of the eyes, nor received any local injury that could have caused this affection. His general health had always been good, and he never felt better than at the time when his sight gave way. Dr. H., on the most minute examination, could detect no visible symptom of disease. There was no vascularity of the tunics; the size and shape of the pupile, the motions of the iris, eyeball and eyelids were perfectly normal, and he felt no pain or uneasiness. He could see distant objects as well as ever, but near ones appeared very indistinct. With the assistance of his father's spectacles, which were fitted with glasses of nine and a half inches focal distance, he could read the smallest print.

The patient was ordered an active dose of calomel and rhubarb and afterwards an aperient of senna and salts twice a week, a spare diet, active out-door exercise—to be kept from school, and not to be allowed to use spectacles. Exactly three weeks afterwards his sight began to improve, and in the course of two days was quite restored. The medicine had purged freely—no worms were discharged. The boy can now read as well as ever without glasses.

After discussing the several proximate causes of presbyopia, Dr. H. very correctly, we think, considers that, in the present case, it was a derangement of the mechanism for adjustment.

"All things considered," he remarks, "I think the best explanation of this case is to suppose that there was some derangement of the mechanism by which the eyes are accommodated to the distinct vision of objects at different distances. When the eye is turned from a distant object to the contemplation of a near one, short interval elapses before the latter is seen distinctly; this interval being

decepuled in the adjustment of the focus of vision. During this process the only visible change is a slight contraction of the pupil; but all physiologists agree that some other change must take place. The lens must either become more convex, or move forwards, or the antero-posterior diameter of the eyeball be lengthened, or the cornea become more prominent, or perhaps there is a combination of all or of some of these modes of adjustment. As all the above actions imply a power of contraction and relaxation in certain internal structures of the eyeball, it is very probable that the movements of these parts should at times be subject to derangement from spasms or from over-relaxation, in the same way as other organs endowed with a contractile power; and therefore, I think it not unlikely that, in the present case, the eyes had temporarily lost the power of changing from the state necessary to fit them for the distinct vision of distant objects to that state required for the distinct vision of near ones: but whether that change is to be regarded as a contraction of certain parts, such as the ciliary ligament, as some suppose, or the fibres of the lens, as believed by others; or in a relaxation of these or other parts, cannot be determined in the present imperfect state of our knowledge of the exact manner in which the eye is adjusted to distance. This view of the case is supported by the following circumstances;

"1. The affection and recovery of the two eyes were simultaneous and equal, as might be expected if the presbyopia depended on a spasmodic derangement of their adjusting apparatus, which, being destined to act simultaneously and equally in health, is likely to be similarly affected in disease.

"2. The vision of distant objects was perfect, and near objects were seen quite distinctly with convex glasses; showing the sensibility and other functions of the retina to be unaltered, and that the cause of the disease was one that did not interfere with the functions of the eyes, excepting by depriving them of their power of adjustment to distance.

"3. Other cases of the sudden occurrence of presbyopia in young children have been traced to the existence of various disorders, such as intestinal worms, epilepsy, and diseases of the brain or spinal cord, all of which are known to be frequently accompanied by spasmodic affections of different organs.

"The treatment of the present case was very simple; but I would call particular attention to the necessity in all similar cases of strictly prohibiting the use of spectacles in the first instance, for they can always be resorted to at an after period should the affection prove a permanent one; and I have but little doubt that, if the wishes of my patient had been complied with, and he had been allowed to continue to use his father's spectacles, the presbyopia would have become a confirmed disease."

38. *Hydrochloride of Barytes in Scrofulous Ophthalmia*.—Dr. PAYAN of Aix, in an article in the *Revue Medicale* for April, 1839, extols the efficacy of the hydrochlorate of barytes in scrofulous ophthalmia, and in a communication in the *Journal de Med. et de Chirurg. Pratique*, for Jan. 1840, he adduces four cases to support his judgment of the powers of that article.

His formula for its administration is as follows:—R. Baryt. Hydrochlorid. gr. ij, (gradually increased to gr. x;) Syr. simp. ℥ss; Aq. puræ ℥iij. M. A tablespoonful to be given every two or three hours, so that the whole may be taken during the day.

MIDWIFERY.

39. *Inversion of the Uterus during Parturition—Rupture of the Posterior Parietes of the Vagina—Passage of the Fetus through the Rupture*.—A woman, 27 years of age, was delivered at her full period, spontaneously but with much straining. The after-birth was also discharged with much pain; and, after the delivery of this last, the woman experienced acute pain in the vagina, and on applying her
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hand to the part, she felt a round, smooth body in the vulva. Dr. SCHNACKENBERG was sent for, and found the uterus was prolapsed through a rent in the posterior parietes of the vagina. He immediately set about replacing the organ. With his right hand well oiled, he endeavoured first to make the segment of the uterus re-enter through the fissure in the vagina, and afterwards to push it upwards with the hand applied flat on the wound. He supported for some time the perineum, and pressed it upwards with the base of the uterus which rested on it. Gradually the uterus rose up, and assumed its natural position. The patient was kept in a suitable position; the lochial discharge came on without difficulty, and the patient got entirely well.—*Gaz. Méd. de Paris*, Oct. 5, 1839, from CASPAR'S *Wöchenschrift für die gesammte Heilkunde*.

40. *On the Influence of the Length of the First Stage of Labour on the Duration of the Second, and the Consequences to Mother and Child.*—This question has lately been much discussed, and has given rise to quite a controversy between two of the highest authorities in obstetrics, Dr. Hamilton, of Edinburgh, and Dr. Collins, of Dublin. In a report of the Western Lying-in Hospital and Dispensary, Dublin, Dr. FLEETWOOD CHURCHILL furnishes some statistical statements which afford valuable data towards the determination of that question.

He has taken, indiscriminately, 31 cases of labour of 36 hours' duration and upwards, and has marked down the duration of each stage, and the issue of the labour to the mother and child. The rupture of the membranes is taken as the limit of the first stage, and the intervals from the commencement of labour to the rupture of the membranes, and from the rupture of the membranes to the birth of the child are given.

Nine cases of labour, of thirty-six hours' duration:

No. of Cases.	First Stage.	Second Stage.	Results to	
			Mother.	Child.
In 5 cases	35 hours	1 hour	Favourable	Favourable.
2	34	2	Do.	Do.
1 premature	32	4	Do.	Still-born.
1 case	25	11	Do.	Favourable.

Four cases of labour, of forty-eight hours' duration:

No. of Cases.	First Stage.	Second Stage.	Results to	
			Mother.	Child.
In 1 case	47 hours	1 hour	Favourable	Still-born (funis presentation.)
1	47	1	Do.	Favourable.
2	45	3	Do.	Do.

Six cases of labour, of sixty hours' duration:

No. of Cases.	First Stage.	Second Stage.	Results to	
			Mother.	Child.
In 3 cases	59 hours	1 hour	Favourable	Favourable.
1	57	3	Do.	Do.
1	53	7	Do.	Do.
1	39	21	Do.	Do.

Three cases of labour, of ninety-six hours' duration:

No. of Cases.	First Stage.	Second Stage.	Results to	
			Mother.	Child.
In 1 case	95 hours	1 hour	Favourable	Favourable.
1	93	3	Do.	Do.
1	90	6	Do.	Do.

This table appears quite conclusive of a fact which Dr. Churchill is desirous of establishing, viz: that the length of the period after the evacuation of the liquor amnii, bears no proportion to the time which elapsed previously, for out of 31 cases of labour, varying in duration from 36 to 96 hours, in only 4 did the second stage amount to more than four hours, whilst in 11 it was concluded in one hour; neither did the duration of the second stage increase in proportion to the prolongation of the whole labour, for of the 3 cases of 96 hours each, in only one did the second stage exceed three hours.

These series of facts so far as they extend, are in direct opposition to the opinions maintained by Prof. Hamilton; for a prolonged first stage neither rendered "the powers of the uterus inadequate to expel the infant with safety to its life or to the future well-being of the patient," nor disposed the "uterus to contract irregularly, so as to occasion retention of the placenta," nor too feebly "to prevent fatal hemorrhage;" nor, lastly, did it give rise to "febrile or inflammatory affections of a most dangerous nature." For, *first*, all the children were expelled alive, and continued to live, except two; one of which was premature (six months), and the other presented with the funis, and whose deaths were consequently not attributable to the protraction of the labour. *Secondly*, neither flooding, retention of placenta, fever, nor inflammation, happened in any case; on the contrary, every one of the cases recovered as well as after an ordinary labour of twelve hours' duration.

"The causes of the delay in these cases," says Dr. C., "were generally such as are enumerated in midwifery works, and with especial clearness by Dr. Hamilton—premature evacuation of the "waters," rigidity of the soft parts, depression of the anterior lip of the os uteri, &c., &c., and the treatment usually recommended was employed successfully."

41. *Statistics of Labour.*—We extract also from the interesting report of Dr. CHURCHILL the following statistics:

Number of females delivered under the care of the Western Lying-in Hospital and Dispensary, Dublin, 638; intern 215, extern 413, abortions 33, leaving 605 cases of labour.

616 children born—340 males, 276 females, 11 cases of twins, 49 still-born or died soon after birth, 31 males, 18 females; of these

- 6 were premature.
- 4 " breech presentations.
- 5 " footling.
- 2 " funis.
- 3 " arm.
- 4 " crotchet cases.
- 1 footling case with prolapsed funis.
- 1 syphilitic.

Ages of 534 women:—

- 47 under 20 years.
- 168 between 20 and 25 years.
- 188 " 25 " 30 "

67 between 30 and 35 years.

50 " 35 " 40 "

5 " 40 " 50 "

Duration of labour in 513 cases:—

Under 6 hours in 133.

About 12 " 164.

24 " 151.

36 " 33.

48 " 13.

60 " 8.

96 " 10.

120 " 1.

Interval between commencement of labour and rupture of membranes in 473 cases:—

Under 2 hours in 104 cases.

About 6 " 109 "

10 " 85 "

14 " 74 "

18 " 31 "

22 " 14 "

26 " 18 "

30 " 4 "

35 " 13 "

40 " 6 "

50 " 6 "

60 " 5 "

80 " 3 "

108 " 1 "

Interval between rupture of membranes and birth of child in 473 cases.

Under 1 hour in 259 cases.

About 2 " 67 "

4 " 61 "

6 " 28 "

8 " 13 "

10 " 10 "

15 " 16 "

20 " 4 "

25 " 9 "

30 " 2 "

35 " 3 "

40 " 1 "

50 " 1 "

Interval between birth of child and expulsion of placenta:—

5 minutes in 145 cases.

10 " 106 "

15 " 102 "

20 " 54 "

25 " 4 "

30 " 38 "

35 " 8 "

40 " 10 "

45 " 2 "

50 " 3 "

60 " 14 "

From 1 to 2 hours	18 cases.
2 to 3 "	5 "
3 to 4 "	2 "
5 hours	4 "
6 "	1 "
7 "	1 "

Presentation in 582 cases:—

In 545 it was natural.

- 5 the hand descended with the head.
- 14 the foot presented, 5 were lost.
- 11 the breech, 4 were lost.
- 4 the arm, 3 were lost.
- 2 the funis, 2 were lost.
- 1 the placenta.

Six cases of *turning* (1 in 100). One child and all the mothers saved.

One *forceps* case (1 in 605). Mother and child recovered.

Four *crutch* cases (1 in 151). All the women recovered.

Seven cases of *hemorrhage*.

Four women died (1 in 151).

49. *On the Position of the Placenta in the Womb.*—In our Number for May, 1839. (p. 242,) we gave an analysis of an ingenious paper by Mr. Carmichael, in which the author maintains that in natural pregnancies, the placenta is always placed low down on the posterior wall, and that its being implanted in any other situation must *ex necessitate* during the growth of the uterus, or at least during its contractions to expel the fœtus, cause a premature detachment and consequent hemorrhage. These propositions are controverted by Dr. RICHARD DOWSEY in an interesting paper in the Number of the *Dublin Journal of Med. Science* for July last.

Dr. D. quotes several cases which seem to entirely overthrow Mr. Carmichael's theory. The most striking of these are the following:

"1. The first case I shall bring forward is one to which I was called on the 5th of June, 1838, in my capacity of Physician to St. Thomas's Dispensary. I was informed the woman was dying in consequence of loss of blood after delivery. On my arrival, I found her pulseless, her features sunken, extremities cold, uterus large and hard. Having given her stimulants, and in vain tried by the usual means to cause the womb to expel the placenta, I prepared to extract, and introducing my hand separated it with little difficulty from the *lower part of the anterior wall*. Its surface extensively presented that gritty degeneration, so frequently seen in such cases. On inquiry into the history of this patient, I was informed by the midwife and other attendants, that her labour had been short and favourable, and no unnatural loss took place, until about half an hour after the birth of the child, which was alive and healthy.

"Here then is a case in which strong uterine contraction existed for four hours, without detaching the placenta, although it did not adhere to the posterior wall; but, as soon as the uterus had rested after the fatigue of labour, and established the peculiar action by which it throws off the after-birth, it succeeded in, at least partially, separating it, and hemorrhage ensued. Why, I would ask, were the strong expulsive efforts unable to effect as much, (particularly as so little assistance was required to peel it from the uterus,) although this placenta was situated where, it is asserted, uterine action principally, nay almost exclusively, resides? I may add, that as soon as the after-birth was detached, the uterus acted naturally, and expelled both it and the hand together, yet I did not perceive any such partial or rotary contraction as is described.

"11. Bridget Nicholson, ætat. 26, a plethoric countrywoman of rigid fibre, was admitted into the Lying-in Hospital, Rutland-square, on the 8th of December, 1839, in labour of her second child. The pelvis was rather undersized

in its dimensions. For some time labour appeared to go on favourably, though slowly; but after several hours had elapsed, and it was evident the head was not advancing in consequence of the want of a good tonic contraction of the uterus, borax was first tried, but this being found useless, three half drachm doses of ergot were administered with intervals of half an hour. The first two doses produced powerful uterine action, the last none. It was ultimately considered necessary to resort to instrumental delivery. After the removal of the child, the uterus remained large and flat, by no means an uncommon sequel to the use of ergot. The placenta could not be moved by pressure, and at last it was requisite to pass the hand to detach it, which was accordingly done by Dr. Dwyer, the Senior Assistant Physician of the Hospital, who stated, it was placed on the *anterior and upper part* of the uterus.

"Here then is an instance in which labour was prolonged for *many* hours, during a great part of which strong uterine efforts existed, nay even the uninterrupted tonic contractions produced by ergot were called into action, and yet no hemorrhage occurred, no separation of the placenta was effected, although it was exposed to their violence, and placed in the very situation in which they are supposed by the author to be the strongest and most efficacious, and where, to arrive at its then position, it must, according to his views, have undergone a considerable degree of rotation."

"VI. The last case I shall cite is that of Mary Heron, *ætat.* 24. pregnant for the third time, who was admitted into the hospital on the 13th of February last. Labour set in regularly on the following day, about nine o'clock, A. M. On examining this woman, I found the placental souffle distinct and sonorous, as if situated immediately under the stethoscope, in the right and upper angle of the uterine tumour. In the opposite angle, the souffle could likewise be heard, but not at all so distinctly. It was also faintly audible across the fundus of the womb. In tracing it downwards from the right angle of the uterus, it gradually grew weaker, until, at last, it was entirely lost about an inch below the umbilicus;—not the slightest murmur could be distinguished in either iliac fossa.

"To these facts I not only directed the attention of several pupils, who happened to be in the ward, but I also pointed them out to Dr. Herdman, the Assistant Physician on duty, who satisfied himself of their correctness. Labour proceeded steadily from nine, A. M. till five, P. M., when the membranes ruptured, and, in an hour after, the patient brought forth a living female child. The placenta was expelled by a renewal of uterine action twenty-five minutes afterwards.

"If now we analyse this perfectly natural case, according to Mr. Carmichael's views, we should expect several circumstances to exist. In the first place, it would be reasonable to infer, as indeed was afterwards verified by examination of the secundines, that the sound indicative of the presence of the placenta, having been heard at the fundus, more plainly at the right angle and feebly at the left, that substance actually was affixed in the situation thus pointed out. And yet how contrary is this to the author's assertion, that the placental murmur is never heard at the fundus, nor is the placenta ever situated there. Such being the case, then, in the second place it was to be supposed, that the uterine contractions would constrict the vessels, interrupt the function of the placenta, (and consequently destroy the life of the child,) and most probably detach it altogether, and that too 'very early in the process of parturition.' No such effects, however, were produced: the labour proceeded naturally, the infant was born alive, and no hemorrhage at any period took place.

"But supposing that the uterus could contract in the way described, (namely, by the anterior wall shrinking within itself, and making the upper part of the posterior wall first become the fundus, and afterwards amalgamate itself with the anterior paries,) without producing the ill effects anticipated, still another objection, founded upon the foregoing case, may be urged against this theory. If the uterine contractions were thus effected, it should necessarily have happened that the bruit, which was faintly heard across the fundus about an inch below its highest point, should gradually have mounted upwards; and, as labour

proceeded, and that portion of the posterior wall, to which the placenta was attached, at last assumed an anterior position, it should have become louder and louder, until it developed itself in full intensity under the instrument placed in the centre of the uterine tumour below the fundus. And the situation of this distinct murmur should from that period have descended, according as the capacity of the uterus diminished, until at length it almost arrived at the pubis. This appears a fair deduction from the author's observations. But instead of such being the facts, I most explicitly declare, that no change whatever was observable in the position of the placental souffle, nor was there any alteration in its relative intensity in the region of the uterus.

"Again, if such a revolving movement took place, as the membranes remained uninjured, until the fetal head had been impelled deeply into the pelvis, I suspect the orifice, through which the child passed, should have shown, that at the time of their rupture, the placenta was situated on the *anterior* wall. But on the contrary, the membranes at the anterior edge of the placental mass were rather longer than at the posterior edge, and the pouch formed for the fundus was somewhat anterior to that organ; thus pointing out its situation to have been, all through labour, the same as stethoscopic examination already proved it to be."

From the foregoing cases Dr. D., thinks it obvious, that to avoid the early separation of the placenta, and its attendant consequences, it is *not* necessary that that substance should adhere to the back part of the uterus, or even to any region, in which contractions do not take place, save for the purpose of detaching its own connection.

"But, furthermore," he maintains, "that no such contraction, as that for which Mr. Carmichael contends, could by any possibility be effected by such structures as, anatomy shows us, alone exist in the genital organs. The only resemblance in the body to such a rotatory movement, is the pulley-like contraction of certain muscles, such as the digastric, the obliquus superior oculi, the circumflexus palati, &c. In all these, there are necessarily present, at least, one strong attachment to a bony structure, which, during the action of the muscle, acts as a fixed point, and a collar in which the muscle plays, and which serves to retain it in its proper place. Where then are we to find such an arrangement in connection with the generative organs?"

"The vagina, to which the uterus is attached below, during parturition, dilates and becomes more relaxed in its tissues, and could not act the part of such a firm bond of union; nor could any of the ligaments by which the womb is supported, but not fixed in its natural situation. Even the round ligaments which have been supposed, erroneously, I think, to perform the office of tendons to certain of the uterine fibres, do not take a direction that would enable them to be of any service in the newly proposed action. On the contrary, the uterine contraction must, by bringing their points of attachment nearer to each other, prevent them from giving any fixity to the organ. Where then are we to seek the point around which the fundus turns, and without which, such a partial contraction of the uterus must, instead of producing a revolving movement in that part, draw it directly downwards, and cause the convex fundus to assume a flattened form?"

"The author attempts to supply this deficiency, by assigning to the fetal body the office of a fulcrum. I am not prepared to deny that such perhaps might be the case, if the remainder of his theory were correct; but I would inquire, what fulcrum can there be, where the uterus, having expelled the child, again 'relaxes completely,' as in the case which that author brings forward, as the fifth instance where he found the placenta on the posterior wall? What prevents us in such a case, when causing contraction by external pressure or the application of cold, from feeling the fundus grow flat under our hand. How is the rounded prominent appearance of the fundus maintained?"

"Such are the considerations which, to my mind, throw a doubt upon the validity of the theory proposed by Mr. Carmichael. The subject of the contraction of the uterus, and the mode in which the placenta maintains its adhesion

undisturbed, and its functions unextinguished, during the uterine efforts, are certainly involved in great obscurity, and the explanation offered by that gentleman (obviously the result of deep thought and extensive research on this curious subject) carries with it such apparent truth, that it *deservedly* excited great attention in the profession. But I trust I have demonstrated the incorrectness of his premises, and the fallaciousness of his conclusions, with respect to these points. If I have succeeded in doing so, I need scarcely allude to his theory of the development of the uterus. If the assumed mode of contraction be not the true one, then there is no necessity for imagining its growth to be confined almost entirely to the anterior wall. The old doctrine, indeed, that all the parts of the womb enlarge, holding the same relative position to each other, but being allowed a certain latitude in the degree and period of their expansion, affords, I think, a much more ready solution of well known facts connected with gestation. It accords with the different forms the uterus assumes at the several stages of pregnancy; its being first pyriform, then oval in consequence of the increase of its transverse diameter at its central and lower part, and becoming at last globular when the cervix has also dilated. It explains too the phenomena observable in placental presentations, in which the hemorrhage, consequent on expansion of the uterine parietes, occurring where the placenta has not the power of accommodating itself to the change, in general takes place almost entirely in the three last months."

43. *Case of complete Detachment of the Os Uteri.* By HUGH CARMICHAEL, Esq. — "Late one evening in the course of last autumn, I was requested to visit a young unmarried female, who, I was informed, was about to be confined of her first child. On my arrival I learned that about an hour previous to my being sent for, she was from home, and when at some distance from it, the waters, as it is termed, broke, and that before she could reach her residence they had been almost all discharged. On making an examination, I found the os uteri sufficiently dilated to admit the point of my finger, but thin and hard; the pains slight, but regular. She continued in this state the entire of the next day, the following night, and a part of the ensuing day; the pains at no time increasing beyond those of the first stage of parturition. During this period, though the pains were insufficient, nevertheless, the head progressed, the os dilating but very slowly, until the dilatation became about the size of a crown piece, beyond which it did not extend, its edges still continuing hard and rimmy. There was no deformity of the pelvis. Considering that the obstinacy which the os exhibited might probably result from the insufficiency of the pains, I determined on inducing them, if possible, to a certain extent, and with that view, on the second day, administered the *ergot of rye* in such doses as to throw the uterus rather upon the tension, than induce the strong uterine contractions that follow its full doses: I gave five grains of the ergot, and in about ten minutes afterwards evidently perceived the uterus slightly ergotised. Considering the obstinacy of the os, I contented myself with carefully watching the continuation of the action of the ergot upon the uterus, and when it began to abate, repeated it in the same dose; this interval was in or about half an hour. In this way *three* doses of the ergot were given, and although I had the uterus so ergotised, that under ordinary circumstances, the os must have given way, (dilated), it still continued to resist the contractions of that viscus. I should have observed, that by this time, in consequence of the very protracted state of the labour, the patient had been much exhausted, so that interference was evidently called for. It may be said that bleeding, tartar emetic, and other relaxants should have been tried; I can only say I gave them the fullest consideration, and determined on the ergot in the way administered in preference; and I would here submit, that there are peculiarities attending sometimes particular cases, so devious from what are usually to be observed, that the treatment must be modified accordingly, in proof of which I believe I could not refer to any one more competent to give judgment on than yourself, from the very extensive practice afforded at the Coombe Lying-in Hospital. However, to resume, the os did not yield, but the head

was propelled fully into the pelvis, pushing the cervix before it. In the course of the evening of the second day the patient's condition grew worse: she became delirious, the pulse quick and irregular; and in a word, she must have quickly sunk if interference had not been resorted to. To apply the forceps, I can only say, the circumstances of the case were such as decidedly to preclude it; there was nothing therefore but the crotchet, and with the hope, though possibly a faint one, of being able so to break up and dismember the child, as to transmit it through the os, the perforator was resorted to, and the cranium evacuated of its contents; the crotchet was then introduced, and traction of a very gentle nature made on one of the parietal bones, for the purpose, if possible, of detaching it, in order to my intention as above stated. During this, however, a strong contraction of the uterus succeeded, when the head was at once expelled, carrying before it the os and a part of the cervix of the womb, the diameter of which measured about three inches and a half, which preparation is in the museum of the Coombe. The placenta came away in the usual manner, there was, however, considerable hemorrhage, and such difficulty in getting the womb to contract, that the cold affusion became necessary. Two hours after the delivery I became much alarmed for my patient; jactitation, restlessness, difficulty of breathing, &c. I gave her a full anodyne, and having procured tranquillity, and given all the necessary instructions to a competent person as to the state of the uterus, which was padded, and other parts to be attended to, left her for the night. On my visit the next morning—and I confess to you it was not without strong apprehensions that I should have found her either dead or dying—to my surprise, she was sitting up in the bed eating her breakfast, expressing how comfortable her condition was compared with that of the preceding day.

"The remaining part of this case is very short, she recovered without a single bad symptom, and in the usual time. I have had an opportunity several times since of seeing this young woman, and of making an examination of the parts; the *present artificial os* is in the usual place, in the upper and anterior part of the vagina, of a pursed up or puckered appearance or feel; she menstruates, but irregularly, and most profusely, accompanied with large clots of coagula; and the case being extraordinary, I was induced to make inquiries from her with respect to sexual desires, which she informs me are nearly, if not entirely gone. She has never since proved pregnant. Such are the particulars of this curious case, and if I learn any thing of interest connected with it hereafter, I will gladly communicate it to you."

Mr. Power, in some remarks which he offers relative to the above case, states that the timely incision of the os uteri, under similar circumstances, would, he is sure, be attended with as favourable a result and much less suffering to the mother, and perhaps with safety to the child.—*Dublin Journal of Med. Science*, Sept. 1839.

On Incision of the Os Uteri in cases of incarcerated Placenta. By R. F. Power, one of the surgeons to the Coombe Lying-in Hospital.—It sometimes happens that the placenta is separated from the uterine parietes, but is confined within its cavity, in consequence of the os being *firmly and rigidly contracted*. This state is what is termed *incarcerated placenta*, and differs from the ordinary forms of irregular contraction of the uterus, in the contraction being more limited to the os and cervix. Many causes may produce this unfavourable state, but which fortunately is not very frequent. I recollect but two cases occurring since my appointment to this hospital: they were *extern* patients, and had been attended by *midwives*, and both were fatal. My friend, Mr. Armstrong, told me of another, that he had been called to lately in this city. The result of these cases is most generally fatal, the patient dying from the effects of a typhoid fever, probably excited by the putrescent mass retained in the system. When a portion of the placenta only is retained, a purulent discharge consequent upon inflammation is sometimes secreted, by the living membrane of the uterus, and by which the particles of the intruding body are carried off. It is also recorded that the placenta has been altogether removed by absorption; such

cases are however extremely rare, and are essentially different from those now under consideration, in which the general termination is death. The first of these complications that came under my notice, was in a poor woman living in Engine-alley, and occurred shortly after I commenced my attendance here; it was produced by the improper conduct of a midwife who broke the *funis*, in her efforts to extract the placenta, and probably thus irritated the os. The cord was ruptured close to its placental attachment, the os was not completely closed but *grasped tightly a small portion* of the placenta, which filled it like a plug; it resisted all the means that were adopted for its relaxation. I was favoured in the treatment of the case by the advice and assistance of my friends Drs. Breen, Halahan, and Carnichael, men whose high professional characters are a sufficient guarantee, that all the ordinary and approved methods of treatment had been resorted to, and they tried them, but to no purpose, the patient died in a few days. The second instance was nearly similar. In both of these cases the women had arrived at the *full period* of gestation, to which state these remarks only apply.

In reflecting afterwards upon the case of the poor woman in Engine-alley, and which was particularly unfortunate, as she left a large young family of helpless orphans, the thought often flashed across my mind; that a simple incision of the os, would have enabled us to have taken a sufficient hold of the placenta to withdraw it. The os was fully within reach, and I would say, that, at least in this instance, the operation was practicable. I am well aware there would be greater difficulties attending it here, than in the instance already alluded to; there is no doubt a greater depth of parts to be encountered, but it will be recollected I am speaking of cases where death is, I may say, inevitable; when the organ has receded, and its contractions have extended beyond the lower portions, then of course this operation would be out of the question, but I beg to be understood as referring only to instances in which the rigid contraction is limited to the os, and perhaps a portion of the cervix, a state which is readily discernible, and two examples of which, as before mentioned, came under my own observation. In such, *after all the ordinary means have been tried in vain*, and death seems certain, as a last resource, before the powers of life were too far exhausted, would this operation be admissible? Are there any circumstances that would render the after consequences of it, in this instance, much more dangerous than in the others? In *premature labours*, when the after-birth has been long retained, or where a portion of that body has been left in the uterus, and alarming febrile symptoms supervene; upon its being cast off, or removed, the fever abates and the patient recovers. Now in the case I have alluded to, the placenta thrown off from the parietes of the womb, but *confined* in it by the contraction of the os, becomes putrescent, thus acts as a foreign body and lights up a typhus fever, which, unless the exciting cause be removed, will destroy the patient; here, when all the approved agents fail in procuring its removal, or abating the distress, ere it be too late, would it be justifiable to simply incise the os, so as to enable the operator to get at and remove the immediate cause of the patient's suffering and danger? I merely throw out the suggestion, without pledging myself to it, in the hope that practical men will calmly consider it, and if in an extreme case it should ever be the means of saving a mother's life, my only object will be fully attained.

Mr. Power gives the following directions for the performance of this operation. The patient should be placed on her left side, close to the edge of the bed, as in the ordinary obstetric position, the fore-finger of the left hand should be then carried to that part of the os or cervix intended to be cut, and a probe-pointed knife or bistoury conveyed cautiously along the finger in the vagina to the point mentioned, at which the os or cervix may be divided. This is done by gently insinuating the point of the instrument within the os, and pressing its cutting edge against the rim on each side, in the direction in which it is intended to be incised, the parts will give way readily before it; and then cautiously giving the blade a withdrawing motion, the openings may be enlarged as much as may be deemed advisable. The bladder should be

previously emptied, and if the incision be brought forwards great care should be taken to avoid its neck. The liquor amnii will escape after the first incision, and if the uterus act, the case may then be left to nature. Some tearing may take place during the passage of the head, but it is generally slight and confined within the limits of the vagina. (Ashwell.) With a view of better avoiding laceration, a crucial incision of the parts has been advised. Before attempting this operation a very careful examination should be made of the os; for I recollect, on two occasions in this hospital, feeling a strong pulsation in the os, as if a large vessel coursed along a part of its rim. Indeed on the first occasion I imagined it was the funis that caused this pulsation, and it was not until after a careful examination, that I was satisfied as to its true source. There is seldom much blood lost. In Dr. Ashwell's and Mr. Tweedie's cases only a few drachms escaped, and the hemorrhage which followed in Mr. Hugh Carnichael's case can not be said to have been altogether derived from the torn parts. If however the section of the parts be succeeded by a profuse hemorrhage; or in the event of its being so long delayed that it might be highly improbable that the uterus would be competent to resume its office, or finally to effect its own delivery, then it should become a matter of deliberation with the practitioner, whether he should further assist by having recourse to the use of the forceps, or to the manual operation of delivering by the feet. As a general principle, it can not be denied that the hand, being of softer texture, and itself endowed with feeling, would be the more gentle instrument; on the contrary, if we suppose the fetal head considerably advanced, or deeply engaged in the cavity of the pelvis, and a sufficient extent of communication to have been made between the uterus and the vagina, it is evident that the application of the forceps might prove a much preferable measure.* If there should be fainting and collapse after the incision, stimulants, such as brandy and ammonia, may be freely given." *Dublin Journal Med. Science*, Sept. 1839.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

45. *Poisoning with Nitrate of Silver, cured by solution of Common Salt.*—A very interesting case of this recently occurred at the Hôpital Saint-Louis. The patient, a man *etat*. 21, stated after his recovery, that he had swallowed, an ounce of the nitrate of silver in solution. This quantity was probably exaggerated, nevertheless he must have swallowed a large quantity from the extreme violence of the effects, and the matters which the patient vomited 12 or 18 hours afterwards blackened the sheets and curtains of the bed, wherever it touched them. When brought to the hospital, June 23, the patient was insensible and there was insensibility of every part of the body; convulsive movements of the face and upper limbs; jaws firmly closed; eyes rolled up; pupils dilated and insensible to light. A solution of salt and water was freely given. After the lapse of an hour and a half, the pupils became less dilated, and the convulsions and closure of the jaws ceased. The salt water was continued for eight hours, when emollient drinks were substituted. At this period the insensibility was less profound, and the patient suffered from violent pains in the epigastrium. It was not, however, until eleven hours after his entrance that the general sensibility returned and the patient was able to speak. Some hours afterwards, profound coma, with insensibility returned and continued for two hours; and the next day, and the day after he had a similar attack. After this, convalescence proceeded uninterruptedly, and he was discharged well, June 29th. *Bulletin Générale de Thérap.* Sept. 1839.

46. *Deaths by Poison.*—A very interesting report made to the House of Commons at the instance of Sir Robert Inglis, has recently been published. It is enti-

* Davis's Operative Midwifery, page 96.

entitled "Returns from the Coroners of England and Wales of all Inquisitions held by them during the years 1837 and 1838, in cases where death was found, by verdict of Jury, to have been caused by poison." These returns it must be premised are not complete, some coroners having neglected to comply, with the request of the Commons, and those who have complied having in many instances omitted particulars of great moment; notwithstanding these imperfections, the document is valuable, and the public not only of England, but of this country would be benefitted by its extended publication. We can give, only, a summary of the more interesting points.

The total number of deaths by poison, 1837-38 was 543, of which 361 were females, and 282 males.

The total number of individuals poisoned by opium, or its preparations, was 186.

The deaths of very young children (most of them at the breast), from opium, or its preparations, administered by mothers and nurses, in ignorance of the powerful effects of those substances on infants, were 52.

The deaths of young children from opium or laudanum administered in mistake for other medicine, were 20. In 11 of these cases, the names of the medicines are given, in the place of which opiates were given by mistake.

The very great number of deaths amongst children, resulting from overdoses of opium, or its preparations, and from doses thereof given in mistake for other medicines, cannot fail to excite attention. Deaths of this kind amount nearly to a seventh of the entire number of deaths by poison. The number was 72!

Most of the children poisoned in this way *lost their lives* owing to the ignorance, carelessness, or presumption of *their mothers*. It cannot be too generally known that narcotic and anodyne drugs, powerful though they be in the adult, act with infinitely greater energy upon the more sensitive nervous system of the infant; so that even experienced medical men never administer remedies of this class to the very young, without exerting the utmost caution and making the most accurate calculation. Two drops of laudanum have been known to kill an infant, nay, we heard of a case in which *one drop* stole away the life of a new born babe. It is evident that the practical inference to be deduced from the facts represented in the above table is—*that mothers and nurses should never dare to administer medicines of the narcotic kind, except under the immediate direction of the medical attendant.*

The Coroner of Nottingham states, that "Godfrey's Cordial is given to children to a great extent; and that he has no doubt whatever, that many infants are yearly destroyed in that borough, but who, dying off gradually, never come under his notice officially." There can be no doubt of the truth of this assertion. At all events we can say positively that such instances occur elsewhere. *Lond. Med. Gaz.* Nov. 1839.

47. *Excoriation round the Throat of a still-born Infant.*—Dr. E. KENNEDY exhibited to the Dublin Obstetrical Society, a still-born infant, with excoriation round the throat, of a dark red colour, and remarked how easily such a circumstance might be mistaken for the result of violence, were it not for the appearances presented by the chord.

ANIMAL CHEMISTRY.

48. *Sugar in the Blood and Urine of Diabetic Patients.*—It is stated in the *Journal de Chimie Médicale* for Dec. 1839, that M. MULLER, of Medebach, has succeeded in detecting sugar in the blood of a diabetic patient. From 12 ozs. of that fluid he obtained 1 drachm, 5 grs. of sugar; and from 50 ounces of urine from the same subject, he obtained as much as 3 ozs. 3 drachms and 37 grs.

49. *On the Composition of Milk.*—M. DONNE considers milk to consist of a fluid holding in solution caseum, a particular variety of sugar and salts, and in

a state of suspension globules of fatty matter or butter. Alcohol and ether dissolve the fatty or milky globules, but have no action on the caseum. A watery solution of iodine colours the caseum yellow, but has no action on the milky globules. These facts prove that the caseum forms no part of the milky globules, and that it does not exist in a concrete form in the milk.

All the milky globules are retained by the filter, and the liquid which passes through it is transparent as water, and deposits the caseum on the addition of an acid. This fact proves that the caseum is in a state of solution, and also that the white colour of the milk is owing to the presence of the milky or fatty globules which are suspended in it. Milk may, therefore, be considered as an emulsion.

When milk is allowed to stand, the cream ascends to the surface. The caseum is only the separation of the milky globules on account of their lighter specific gravity; and if the milk be examined in a transparent vessel, it will be seen that the layer next the cream is the whitest, whilst that at the bottom of the vessel is of a greenish hue, and semitransparent. This difference of hue is owing to the greater or lesser proportion of milky globules in the different parts of the fluid.

When it is allowed to stand some time longer it becomes acid, though it was alkaline when first drawn. The cream gradually thickens, the caseum becomes consolidated, gaseous matters are disengaged, a strong odour of rotten cheese is perceived, and the microscope discovers a multitude of animalcules and infusory vegetables. If the milky globules be previously separated, they are found to become rapidly acid; whilst the watery portions holding in solution the caseum undergo the alkaline or putrefactive decomposition.

The infusory vegetables in milk are not observable till long after it has undergone the acid change. It cannot, therefore, be considered as the cause of the acetous fermentation, as is remarked in vegetable infusions, which undergo the alcoholic fermentation. The infusory animalcules exist equally in the acid as in the alkaline part of the milk during these changes.

M. Donné has remarked, that there is a fixed relation between the secretion of the colostrum in the breast before delivery, and the secretion of the milk after that process; and he thinks that women may be in this respect divided into three classes. The *first* class includes those in whom there is scarcely any milky secretion till delivery is over. In them the colostrum consists of a viscous liquid containing a very few milky globules mixed with granular bodies. In these circumstances the milk after delivery is always poor, and in small quantity. In the *second* class the colostrum is more or less abundant, but is poor in milky globules, which are small and ill-formed. Besides the granular bodies, mucous globules are detected in the colostrum. After delivery, the milk is more or less abundant, but is poor and serous. In the *third* class, the colostrum is rich in regularly-formed milky globules, and is only mixed with the usual granular bodies. The milk which is secreted after delivery is abundant, rich, and of good quality. It is this class of women who ought always to be preferred as nurses.—*Ed. M. and S. Journ. from Compté Rendu de l'Acad. des Sci., Sept. 1839.*

MISCELLANEOUS.

50. SIR JAMES CLARK's *Statement of the Case of the late Lady Flora Hastings*.—So long as the accusations brought against me, in reference to the case of the late Lady Flora Hastings, continued to be either anonymous or unauthorised, I felt it right to submit in silence to every species of provocation, rather than bring before the public circumstances of a very delicate nature, which came within my knowledge in the implied confidence of professional intercourse. The publication, however, of the Marquis of Hastings, the nearest relative of Lady Flora Hastings, made me doubt seriously whether, in regard to myself, as well as the profession, I was justified in not laying before the public an account of the case

so far as I was concerned. The renewed attacks which have followed that publication permit me no longer to hesitate; although, even now, it is with the utmost reluctance I bring myself to enter into details which, I am of opinion, ought never to have been made the subject of public discussion.

On the 10th of January last, I was consulted by Lady Flora Hastings, who had that day arrived from Scotland, and had come into waiting on Her Royal Highness the Duchess of Kent. She had derangement of the bowels, and of the general health, and she complained of pain low in the left side. There was also considerable enlargement of the lower part of the abdomen.

Under the use of some very simple remedies the derangement of the bowels and the pain in the side gradually abated, and ultimately ceased; and Lady Flora complained only of weakness.

The size of the abdomen, however, continued undiminished; and Lady Flora's appearance became the subject of remark in the palace. About the 1st of February, as nearly as I am able to fix the date, I was sent for by Lord Melbourne; and, on going to him, his Lordship informed me that a communication had been made to him by Lady Tavistock, respecting Lady Flora Hastings, whose appearance had given rise to a suspicion in the palace that she might be privately married: his lordship asked my opinion on the subject. I stated, in reply, that while I thought such suspicions ought not to be readily listened to, I was, at the same time, bound to admit to him that the appearance of Lady Flora in some degree countenanced them. I added that, without more ample means of observation, I could not venture to give an opinion on the subject; and his lordship agreed with me that no step should then be taken in the matter.

From this time the condition of Lady Flora Hastings caused me considerable anxiety. The only source, besides pregnancy, from which the size and peculiar form of the abdomen could proceed was disease; but the probability of disease being the sole cause, in Lady Flora's case, was diminished by the circumstance that the enlargement was accompanied by very little general derangement of health. In fact, Lady Flora continued to perform her usual duties with apparently little inconvenience to herself.

I continued to visit Lady Flora about twice a week, from the 10th of January to the 16th of February, and on several occasions examined the state of the abdomen over her dress; but being unable, in this way, to satisfy myself as to the nature of the enlargement, I, at length, expressed to her my uneasiness respecting her size, and requested that, at my next visit, I might be permitted to lay my hand upon her abdomen with her stays removed. To this Lady Flora declined to accede.

Matters remained in this state until the 16th February. On that day I found it had been determined that I should acquaint Lady Flora with the suspicions which existed in the palace, and should suggest her calling another physician into consultation with me. Before visiting Lady Flora, I asked Lady Portman, the lady in waiting, if I might use her name to Lady Flora, as one of the ladies who entertained the suspicion respecting her. To this, Lady Portman at once assented. Her Ladyship then described the peculiarities in Lady Flora's form and carriage, which had produced the impression in regard to her state. To the question as to what my opinion on the subject was, I replied that the appearances were certainly suspicious, but that even to medical men such appearances were often deceptive. Lady Portman concluded by observing, that for the sake of Lady Flora Hastings herself, as well as of the court, it was necessary that the matter should be cleared up. Immediately after this interview with Lady Portman, I went to Lady Flora for the purpose of making to her this very unpleasant communication; and I need hardly add that I made it in the most delicate terms which I could employ. After a few remarks on the state of her health, I told her that her size had attracted the attention of the ladies, and that it was now my painful duty to acquaint her ladyship that they had, in consequence, been led to suspect that she must be privately married. This was the mode, and these were the words in which the painful communication was made.

I urged Lady Flora, for obvious reasons, if there were grounds for this sus-

picion, to acknowledge the fact, and if not, to see another physician at once, to put an end to the rumour. Lady Flora denied that there were any grounds whatever for the suspicion, and named Sir Charles Clark, who, she said, had known her from her childhood, as the physician she would wish to be called in; but she declined, notwithstanding my earnest entreaties, to see him on that day. This refusal, after the reasons which I had given, lessened very considerably the effect upon my mind of her ladyship's denial.

After the interview with Lady Flora it remained for me to communicate what had passed to her royal highness the Duchess of Kent. I, therefore, informed Lady Flora that I was going to her royal highness for that purpose; to the propriety of this Lady Flora immediately assented. I accordingly went to the Duchess of Kent, and stated the nature of the interview I had had with Lady Flora. Her Royal Highness immediately expressed her entire disbelief of anything injurious to Lady Flora's character, and she asked me my opinion. However reluctant I felt to express any doubts on the subject after Lady Flora's declaration, I could not decline giving a conscientious reply to her royal highness's question; and I answered to the effect that the suspicions I previously entertained were not removed.

In the course of the evening of the day on which I made the communication to Lady Flora Hastings, I received a note from her ladyship, of which the following is a copy:

"Saturday.

"SIR—Although I think you perfectly understood me this morning, that I did not wish you to take any steps without hearing from me, it is perhaps better, to obviate the possibility of any mistake, that I should distinctly say so. I shall be governed entirely by her royal highness's wishes and orders.

"Yours sincerely,

FLORA ELIZ. HASTINGS."

I heard nothing more on the subject till the afternoon of the following day, (Sunday, February 17th,) when I received another note from Lady Flora, of which the following is a copy:

"SIR—By her royal highness's command I have written to ask Sir Charles Clarke to name an hour this afternoon to come to me. He has answered my note by coming, and is now here. Could you come and meet him?

"Yours sincerely,

F. E. HASTINGS."

On receiving this note I immediately went to Lady Flora, and found Sir Charles Clarke with her ladyship. He stated to me, in Lady Flora's presence, as part of the conversation he had had with her, that he urged her, if there were any grounds for the suspicions entertained, to admit the fact now, as after the examination it would be too late.

After this conversation, Lady Flora requested that Lady Portman might be called in. On her arrival, Lady Flora retired to her chamber, where her maid was in attendance. After Sir Charles Clarke had made an examination, he returned with me to the sitting-room, and stated as the result, that there could be no pregnancy; but at the same time he expressed a wish that I also should make an examination. This I at first declined, stating it to be unnecessary; but, on his earnestly urging me to do so, I felt that a further refusal might be construed into a desire to shrink from a share of the responsibility, and I accordingly yielded. After finally consulting, we gave the following certificate.

(Copy of Certificate.)

"BUCKINGHAM PALACE, February 17, 1839.

"We have examined with great care the state of Lady Flora Hastings, with a view to determine the existence or non-existence of pregnancy, and it is our opinion, although there is an enlargement of the stomach, that there are no grounds for suspicion that pregnancy does exist, or ever did exist.

(Signed,)

"CHARLES M. CLARKE, M. D.

"JAMES CLARKE, M. D."

Before parting with Lady Flora, both Sir Charles Clarke and myself pressed upon her ladyship the expediency of her appearing on that day at table as usual.

Such is a plain statement of the leading facts of this unfortunate case, so far

as I am concerned. That I was unable to ascertain the true nature of Lady Flora's state, I at once admit, and most deeply regret: but when the difficulties which frequently occur in cases of this description, even where every facility is afforded for investigation, are considered, it can scarcely be made a matter of reproach to me that, amidst the disadvantages under which I laboured, I was unable to affirm that Lady Flora's change of appearance was the result of disease, and of disease alone. If even Sir Charles Clarke did not venture to express a positive opinion until after a careful examination, it will be readily conceded that no other person could have done so without recurring to some similar proceeding. And if any thing further were required to establish the difficulties of this very peculiar case, and the heavy responsibility attaching to a decision on it, Sir Charles Clarke knows that there are other facts connected with it which prove, in the most unequivocal manner, both the one and the other—facts which do not throw the slightest shade of doubt on the purity of Lady Flora, nor are matter of blame to any one, but which it is not necessary to bring before the public.

The *post-mortem* examination established the fact, that the death of Lady Flora Hastings was occasioned by extensive disease, dating its origin "at some former and distant period of time;" and yet such was the obscurity of the symptoms which, during life, accompanied the disease, that its nature became evident a few weeks only before Lady Flora's death; and the fact of its having involved every organ within the abdomen was revealed only on the *post-mortem* examination.

I think it right to notice, in this place, a part of my conduct which may at first sight appear censurable. I allude to the admission of my suspicion, that Lady Flora might be pregnant, before I had been permitted more fully to examine into her state. Under almost any other circumstances it would have been highly improper for me to have answered an inquiry on such a subject; but as I could not authoritatively remove suspicions founded upon appearances, which, taken alone, would, in a great majority of cases, indicate what was feared and not the singular state of disease revealed after the death of Lady Flora, I felt it my duty, considering the very peculiar responsibility which attached to me, to confide the doubt which was in my own mind to those who had a right to demand my real opinion, and who, I felt assured, could not use it in a manner unfriendly to Lady Flora.

[We have inserted the preceding statement, as the event which it records has excited great attention, and to gratify some of our correspondents who have requested information relative to it. That this occurrence should have ever been made public is one of the evil fruits of the virulent party spirit of the present times. It was seized on by a party, who, for the promotion of political purposes, have not hesitated to invade the sanctities of private life, outrage female delicacy, and expose to public gaze a circumstance which should never have been known beyond the precincts of the palace. Whilst every one must have felt the deepest sympathy for the unfortunate position of Lady Flora, it must be admitted to have been necessary for the moral character of the court of the youthful Queen, that suspicion should be set entirely at rest respecting the condition of an unmarried lady whose appearance led the ladies of the court to suspect that she was pregnant.]

That a physician officially called upon, under such circumstances, should, merely on the faith of the high character of the lady, the only certain means of ascertaining her condition being denied him, decline to testify to her not being pregnant, is what might have been expected; indeed, is the only course which a proper prudence and regard for his own character would justify. Sir James Clarke's statement is, in fact, the most thorough vindication of his own course in this unfortunate transaction. This distinguished physician is well known in this country by his writings, and is highly respected for the soundness of his views, and the extent of his acquirements; and his professional and private character, by the concurrent testimony of all who enjoy his acquaintance, stand on the loftiest eminence.]

AMERICAN INTELLIGENCE.

Case of Imperfect Vision, following a blow on the Eye.—Absence of the Crystalline Lens ascertained by Catoptric examination. By JAMES W. KERR, M. D., one of the Resident Physicians to the Philadelphia Hospital, Blockley.

HAVING observed in your Journal of August last a case illustrative of the "value of the catoptric examination of the eye as a means of diagnosis," I have thought that a case confirmatory of the same fact might be interesting to you. The following case, which occurred under my observation, is therefore presented to you for your disposal.

J. M., a stone-cutter, while engaged at his trade in trimming a stone, 18 years ago, was struck in the left eye by a piece of the stone, or of the instrument which he was using, which caused severe pain, redness and swelling. These were removed in a month by bleeding, leeches and purgatives, but he has since been deprived of useful vision with that eye.

The eye presents the following appearances:—Cornea, conjunctiva, sclerotica, natural; colour of iris same as that of the right; pupil black, clear, somewhat larger than the right; slightly irregular, apparently no adhesions; iris tremulous and somewhat contractile. Says that he can distinguish day from night, and bodies when moved in front of the eye, and can see best from the nasal side of the eye.

On examination with a lighted candle, I could only distinguish the first upright image from the cornea. I examined the eye several times, and could never see more than the one image. As this corresponded with the appearance of the eye in your case, I presumed that the lens had been displaced by the blow which he had received eighteen years ago.

I then procured a pair of spectacles with double convex lens, and adjusting them to the eye, and closing the right one, he was much surprised at being able to distinguish objects. After wearing them for a few moments he could readily distinguish a key, knife, cent, quarter or half dollar. I then directed him to wear them for a few hours, when he was able to distinguish persons and large letters.

Although this case is not so satisfactory as yours, yet it is useful as showing the value of the catoptric examination as a means of diagnosis, and points out a ready mode of relief.

Violent Symptoms from the Bite of a Rat. By WHITMAN WILCOX, M. D. of Baton Rouge, La., late Demonstrator of Anatomy in the Medical College of Louisiana.

Benj. Bryan, *ætat.* 40, of good habits and constitution, received a bite from a rat upon the fleshy part of the hand, near the root of the thumb, about the first of March. Very little notice was taken of the wound until 12 or 13 days afterwards, when it commenced to be painful and tumefied. I was called in on the evening of the 17th, and found him with pain in the back and head, heat of skin, thirst, tongue with a thin white coat, bowels con-

tive, hand painful and swollen, pulse nearly natural. I prescribed Pil. Cath. U. S. No. iij. and an emollient poultice to wound.

18th, Morning.—Pills operated twice briskly, which nearly relieved the pain in the head and back, but there was still considerable pain in the hand, heat of skin and general uneasiness. Prescribed acet. ammon. ʒij; Sp. nit. dulc. ʒij; morph. sulph. gr. ʒ. Mix. S. tablespoonful every half hour till all taken. Two o'clock, P. M. medicine had produced no effect; all the symptoms had become aggravated. Venesection, ʒxv. Night, considerably relieved, though still uneasy. Ordered Pulv. Doveri gr. xv.

19th, Morning.—Had some disturbed sleep, complained of no local pain, but general uneasiness. His mind was bewildered and wandering; with difficulty could be made to give direct answers to questions; could not tell where he was bitten, or when it first began to pain him. When pressed to describe his symptoms, said he felt very bad, had some pain in every part of his body. His eyes were glazed and dull, tongue a dark brown fur in the centre of a white coating. The wound was much swelled and very tense; tumefaction circumscribed. Upon the apex, about the size of a quarter of a dollar, it had assumed a mottled and gangrenous appearance. I made three or four incisions into it, which afforded considerable relief, and applied a warm emollient poultice. R. Submur. hydrarg. gr. xv.; morph. sulph. gr. ss. M. Ft. pil. iij. S. one every three hours.

20th, Morning.—Had wandered during the night, felt very weak, appearance much relaxed and pale, extremities and tongue cool, no desire to take nourishment. R. Quinine sul. gr. vj. 2 P. M. quinine had decidedly a favourable effect, and he appeared calm; took some chicken soup.—Evening, no motion from the bowels since night before last. R. Pulv. Rhei ʒss. Soda sub. carb. ʒj. M.

21st.—Medicine operated once; much relieved, and continued to improve.

25th.—Called again to see the patient, who was complaining of severe pain, resulting from inflammation of the absorbents extending from the wound to the axilla. There was much heat, redness, swelling, and some general excitement. V. S. ʒv., which, together with the use of cold applications, diaphoretics, anodynes to procure sleep, and after much suffering for five or six days, the symptoms gradually subsided and he was again convalescing. After the elapse of three or four days the inflammation of the absorbents again showed a disposition to recur, but was dispersed by the application of a blister over the part and nearly the whole length of the forearm. The thick skin in the vicinity of the wound had sloughed off, leaving the parts beneath of a dark brown appearance, apparently possessing but little vitality.

Tenotomy for Club Foot successfully performed.—By W. M. EGBERT, M. D. of Manayunk.

A son of Mr. Jacob Coon, of Manayunk, was born with varus of the third degree in the left foot. When the child was 6½ months old, his father, who had heard of the operation for club foot, consulted me in regard to the propriety of correcting the deformity, anterior to the period of his walking.

Upon examination, I found the heel shortened about an inch and a half and drawn inward nearly to the malleolus internus, obliterating it completely. The fascia plantaris and anterior tibial muscles were considerably contracted,

The boy was well grown, fat and healthy. The process of dentition having just commenced, induced me to fear the effects of an operation; but, to allay the father's anxious solicitude, I consented to operate.

Accordingly, on the 7th of March, I divided the tendo Achillis and at once depressed the heel to a natural position, in the presence of Drs. T. F. Betton of Germantown, H. Chase of Philadelphia, I. L. Day of New Jersey, James M. Thomas of Centre county, Pa., and Messrs. Budd, Keim and Green, medical students.

I applied the simple splint of Desault, with a single joint, and was thereby enabled to adapt its angle to the inclination of the foot. I prescribed an opiate, which kept the child composed during the night. On the following morning, I found but slight symptoms of excitement, and the patient had rested well through the night. I ordered a cathartic, which dispelled the irritation. No other unpleasant symptoms occurred, notwithstanding two inferior incisors made their appearance within ten days.

I have assisted my friend Dr. T. F. Betton and others in the operation and cure of several club feet, and my opinion is decidedly in favour of bringing the heel down at once, and causing the toes to be elevated beyond the natural right angle with the leg. I believe the operation to be extremely simple, and unattended with danger; and have been induced to make this case public in order to counteract, as far as possible, the impression that the operation should be deferred until many months have elapsed.

The foot is now well, and none of the original deformity exists.

April 1st, 1840.

Case of Club Foot cured by Division of Tendo Achillis.—By WM. D. LYLE, M. D. of Pickensville, Ala.

Sept. 10th, 1838.—To-day I operated for club foot on a child three years old. I divided the tendo Achillis an inch and a half above the heel, on the plan proposed by Dr. Stromeyer. So soon as I introduced the bistoury and brought down the heel, the tendon separated with an audible sound. I proceeded to press it by applying a bit of adhesive plaster to the wounds on each side, which were not exceeding the eighth of an inch in extent. Next I applied a soft compress on each side of the divided tendon, and secured the whole by a roller, with the heel drawn upward, fixed in that position by the simple apparatus contrived by Dr. More.

12th.—This morning the tendon has united sufficiently to bear the use of the instrument. After it was applied, the little fellow was able to put his toes *flat* upon the floor. The parents expressed much satisfaction, and look confidently forward to a speedy cure.

13th.—To-day the instrument was removed. I find the progress of the operation to exceed by far my most sanguine anticipations. Without the instrument he was able to apply his toes to the floor naturally, which he had never done before—always, previous to this time, treading on the upper portion of the foot. Nothing of any importance has yet occurred.—The instrument I have employed is one of my own construction; not differing in any material point from those employed by other surgeons, either in make or the mode of application. I merely mention this fact, because many, if they have not the proper appliances at hand, will not attempt to construct them, because they imagine they cannot do it. But this is not the fact. In nine cases out of ten, if the surgeon attempts it, he will be able to form something that will answer his purpose.

In ten days my patient had recovered. The cure was perfected by the judicious application of a shoe. I now have the satisfaction of seeing my little friend almost daily, perfectly cured.

I have thought proper to communicate to you the above extract from my case book; not because I think the operation or its detail contains any particular merit, but from the circumstance that it has of late become a favourite subject with the profession.

I cannot close these remarks without doing full and ample justice to my friend and former preceptor, Dr. Smith, then of the University of Maryland, by saying that it was from him, in 1836, I received the most valuable hints upon this important subject.

Feb. 24, 1840.

Case of Gun-shot Wound of the Head and Brain.—Recovery. By H. JANSON, M. D. of Batavia, Genessee county, N. Y.

On the 19th of September last, I was summoned to an adjoining town to see the patient, Madison Moore, aged about 19. His constitution was good, and apparently free from any hereditary predisposition to disease. On the morning of the 19th, he left home, with his rifle, to go upon a hunting excursion. He called, in the neighbourhood, at a cooper's shop, for a second person to join him. While there, he seated himself upon a work-bench, elevated a few feet from the floor, and negligently placed his rifle, which was charged, between his legs, with the muzzle pointing towards his face. The gun was furnished with a percussion lock and the cone capped. In the act of passing the left foot to the floor, the inner edge of his foot hit the tip of the lock and sprung it sufficiently to explode the cap and with it the rifle. The mouth of the weapon happened to be in range with the upper edge of the left nostril—the bullet consequently laid open this passage to the nasal bone—speeding onwards it then penetrated the skull at the inner angle of the corresponding superciliary ridge, just within the socket of the eye, and, passing upwards, emerged from the cranial cavity, through the os frontis, at a point about two inches above the place of entrance. In its progress both tables of the frontal bone were shattered; but the skin covering the track was quite intact, lacerated only at the entrance and exit of the ball.

I saw the sufferer within an hour and a half from the occurrence of the accident. He was at this time stretched upon a pallet of straw, weltering in his blood, near the spot where he fell. The position was supine—the whole cuticular surface cold and livid—the pulse, 140 per minute, tremulous and weak—coma, eyes closed, and breathing deeply stertorous. The insensibility was so great that he was only slightly roused when I divided, by an incision, the skin covering the track of the ball. From appearances there was about 12 oz. of blood lost, and particles of cerebral substance were seen scattered upon the floor. I learned from Dr. Jas. H. Billings, who saw M. near the period of the accident, that two convulsions had followed each other after he arrived.

I carefully sponged the blood from both wounds and removed pieces of bone and detached portions of brain from the skull, and ascertained the groove in the anterior lobe of the left hemisphere was in its greatest depth six lines. The wound in the forehead was then dressed by adhesive plaster, a bread and milk poultice and bandages—the ala of the nose was adjusted and retained by three sutures and adhesive straps, and a small quantity of diffusible stimulants were given to revive the waning powers of life.

The 20th, I saw the young man at his father's house, whither he had been conveyed upon a bier the day previous, in a senseless condition—his state still comatose and breathing stertorous—surface warm, pulse full, regular, and 120. V. S. 16 oz. and a dose of sulph. mag. was ordered.

21st.—A good evacuation had been obtained during the night. Pulse bounding and 110, and great reaction. V. S. 16 oz.

22d.—Pulse yet strong and 90; breathing less laboured, and could be roused with some difficulty, but again relapsed. The head had now become very hot, and the pulsations of the brain were remarkably distinct upon the left upper surface of the head, where an area of the skull had been fractured when the ball made its egress. This portion of the skull was about three inches in diameter. V. S. 12 oz. As the bowels had not been opened for the last 24 hours, 1 oz. of Sulph. mag. was directed, and followed with injections.

23d.—An abscess was discovered, pointing at the summit of the head, which, on being opened, discharged half a gill of foetid pus. From this time the functions of the brain were gradually restored, and no untoward symptoms supervened, excepting a fungus cerebri vegetating from the entire length of the wound of the forehead. It grew daily, until, in three days, it projected six lines from the surface of the skin and downwards over the eye. The dressings were continued as usual, and I removed from day to day, with a scalpel, layers of the tumour, without any attending hemorrhage or inconvenience to the patient. This was persevered in until the fungus was reduced below the surface of the skin.

About ten days from the date of the injury, adhesive straps and simple cerate were the only dressing, until the wound had entirely healed. For the first twelve days in this case, M. passed his urine and fæces without giving any intimation. After this, signs were made when the rectum was to be emptied, but the urine was voided as usual. This was done for a few days, after which, when the offices of nature were to be performed, the attendants were duly notified. There has been no paralysis of any organ at any time; and correct but short answers given to questions put to him from the time he was capable of opening his eyes. The patient was kept on a mild diet, and the room shaded and perfectly quiet.

I have now the happiness to see my patient restored to health, and in the enjoyment of all his faculties, excepting, perhaps, a slight imperfection of those organs phrenologically ranged in the course of the ball.*

Views and Treatment of an Important Injury of the Wrist. By J. R. BARTON, M. D.—Any further observations on a class of accidents, so common, and which have been so often the subject of inquiry, as that of injuries of the forearm and wrist-joints, may be deemed superfluous by those who read, but have no personal experience in surgery. But to those engaged in the active pursuits of our profession, it is well known that, notwithstanding the volumes that have been written on this subject, there are yet certain injuries involving these parts which are not fully understood, and consequently not successfully treated.

My attention was early fixed upon such cases, and through a series of years they have been particularly interesting to me; and it is from my conviction that, up to this time, error prevails, both as to the nature and the treatment of them, that I am induced to publish my views and practice therein.

I do not know any subject on which I have been more frequently consulted

* We hope our correspondent will favour us with some more precise information relative to this last point.—Ed.

than on deformities, rigid joints, inflexible fingers, loss of the pronating and supinating motions, and on neuralgic complaints resulting from injuries of the wrist, and of the carpal extremity of the forearm—one or more of these evils having been left, not merely as a temporary inconvenience, but as a permanent consequence.

The accidents which are to be the principal subject of my remarks, usually pass either for sprains or dislocations of the wrist. Under one of these denominations are these cases to be detected, which, though partaking somewhat of the character of sprains or dislocations, are distinguishable from either of them respectively. They may be recognised by their being accompanied by more distortion of the hand and arm than any which can arise from simple sprains of the wrist, and yet less than that which must necessarily take place when there exists a complete luxation of the carpus. The profile of the limb under this injury is a peculiar one, distinguishing it on the one hand from the sprained wrist, and on the other from luxation.

A nice discrimination between these and the other varieties of accidents is not a mere matter of useless refinement in diagnosis; but it is one of great practical importance; as is confirmed by the number of persons who have never fully recovered from the effects of accidents of this nature, treated without such discrimination.

In simple sprains of the wrist, though accompanied by extreme swelling, the limb will still be found to retain a characteristic outline of its natural contour. It is not marked by any abrupt and solid eminences, the swelling is rather uniform, diffuse, and puffy, the hand continues on the same line with that of the forearm, &c. In complete dislocations, the nature of the injury must always be very palpable from the great bulging of the overlapped bones, and from the shortening of the limb, &c. Between these two injuries there is too great a dissimilarity to admit of an excuse for the surgeon who mistakes the one for the other; but he may confound with these, and it is a common fault to do so, a *sub-luxation of the wrist, consequent to fracture through the articular surface of the carpal extremity of the radius*; although to this accident belong appearances exclusively its own.

It is to this peculiar injury that I wish to draw attention.

It is one of the most common injuries to which the upper extremities are subjected; and every practitioner of moderate experience will, I am sure, be able to call to his recollection the appearance which the limb presents under such circumstances, as well as the embarrassment which he has experienced in his attempts to obviate eventual deformity, to preserve the functions of the fingers, and to restore the motions of the wrist and forearm.

The similarity of manner in which this accident generally occurs, is striking. It is almost always found to have taken place in consequence of the individual having thrown out his hand to rescue himself from falling, or to ward off injuries threatening a more important part of the body. In the act of falling, for example, the hand is thus instinctively thrown out, and the force of the fall is first met by the palm of the hand, which is violently bent backward until the bones of the wrist are driven against the dorsal edge of the articulating surface of the radius, which, being unable to resist, it gives way. A fragment is thus broken off from the margin of the articular surface of this bone, and is carried up, before the carpal bones, and rested upon the dorsal side of the radius; they having been forced from their position, either by the violence, or by the contraction of the muscles alone. We have then an imperfect luxation of the wrist, depending on a fracture through the extremity of the radius. The deformity will be found to correspond with this state of the case. There is a tumour on the dorsal side of the arm formed by the bulging of the carpal bones and fragments; whilst below it, on the palmar side, the extremity of the radius projects. The degree of prominence of these parts, depends upon the size of the fragment and the violence of the injuring force. The ulna not being very intimately involved in the injury, retains its position, and serves as an abutment, against which the hand seems to rest; whilst the radius, as it has its edge broken off, allows the

hand on that side to be drawn upward, and hence to render, on the under side, the styloid process of the ulna more conspicuous than natural. Crepitus cannot always be felt, sometimes in consequence of the smallness or crushed condition of the fragment; at other times, owing to the great swelling and tension; but in every such case, the distortions of the limb are to be seen, and may be removed by making firm extension and counter-extension from the hand and elbow, at the same time gently depressing the tumours already spoken of. By the employment of these means, all deformity, except that which evidently depends upon the more general swelling, may be satisfactorily removed; but the moment the extension and counter-extension are relaxed, the combined action of the flexors and extensors of the fingers, as well as those of the wrist, force the deformity to reappear as conspicuously as before: and as often as the effort is renewed and discontinued, will the deformity appear and disappear. In this respect does this species of injury in an especial manner differ from a complete simple luxation of the wrist; which, when once reduced, must continue so after the reducing force has been withdrawn. There is no spontaneous relaxation after the simple complete dislocation has been removed; whereas, in this case it immediately succeeds the withdrawal of the force. This accident must not be confounded with those which are also of frequent occurrence, namely, fracture of the radius, or of the radius and ulna just above, and not involving the joint. It will be found on referring to the writings of Boyer, Desault, Sir Astley Cooper, Dupuytren, and many others, that this frequently happens, and that the fracture often reaches to within a few lines of the extremity of the bone; and that these cases are very frequently mistaken for dislocations, though they are in reality fractures exterior to and disconnected with the joint; the deceptive deformity being occasioned by the displacement of the broken ends of the bone caused by the action of the muscles and the weight of the hand. A very good illustration of such cases may be found in plate 12, figure 1, in Mr. Hind's folio work on fractures of the extremities. It may there be seen how powerfully the flexors and extensors act in retracting the inferior portions of the bones, and how closely the radius and ulna are drawn together through the instrumentality of the pronator quadratus muscle below, whilst toward the brachius the pronator teres is exerting its power to keep the limb in a state of pronation. Now these are consequences which do not result from the species of injury to which I refer. The fragment may be, and usually is, quite small, and is broken from the end of the radius on the dorsal side, and through the cartilaginous face of it, and necessarily into the joint. The pronator quadratus is not involved in the fracture. The radius and ulna are not materially disturbed in their relations to each other. The only important change, which takes place in consequence of this fracture is, that the concave surface at the extremity of the radius, which receives and articulates with the three first carpal bones, is converted, as it were, into an oblique surface by the loss of a portion of its marginal ridge; commonly by the separation of an entire piece; sometimes by the crushing of its substance. The moment the cartilaginous extremity of the radius is deprived of its concave form, the united force of the carpal and digital flexors and extensors is exerted to create a complete luxation; but as the ligaments are only stretched, or but partially torn, this cannot take place. The carpal bones, therefore, only emerge collectively from their natural position, and carrying before them the broken piece, rest on the dorsal side of the radius, forming a tumour there; whilst the end of the radius itself occasions on the palmar side a prominence which is round and smooth, and differing in this from similar projections formed by the fractured ends of bones, the abruptness and harshness of which may sometimes be distinctly felt through the soft parts, and which are themselves, when pressed upon, acutely painful.

It follows of course, in injuries of this kind, that unless some method of dressing be adopted whereby the retraction of the hand may be permanently counteracted, and the prominences repressed, the patient will recover with a crooked arm, and under a sacrifice of some of the functions of the hand. The customary modes of treating either sprains or dislocations of the wrist, or fracture of the

forearm, are totally inadequate to the purpose, and should not be relied on as a treatment for these particular cases by any practitioner who has regard for the welfare of his patient, and for his own reputation. There is no professional point upon which I can more confidently express myself, than upon the errors committed in the treatment of these cases—passing, as they commonly do, for sprains of the wrist, and hence treated as such. After an unvarying success in the management of this accident for many years in the Pennsylvania Hospital, in the Blockley Hospital, and in private practice, I can strongly recommend the following plan of treatment:—Two thin, but firm splints of wood, are to be prepared, of sufficient length to extend from just below the condyles of the os humeri to the ends of the fingers, and of width enough to embrace the sides of the limb. These are to be lined on one of the sides with carded cotton, or something equally soft, and wrapped with a bandage. Two compresses, each about two inches square, and composed of strips of bandage about one yard and a-half long, evenly folded up, are also to be in readiness. The arm is then to be flexed at the elbow, and one assistant is to hold it firmly above the condyles, whilst another makes extension from the fingers. The surgeon now presses the prominent end of the radius on the inner side, and the bulging carpus and fragment on the outer side, into their respective places. The roller is then to be lightly pressed around the hand and arm, securing in its course up the limb one of the compresses precisely over the carpus and back of the hand, and the other with equal precision over the palmar side of the radius just above its carpal extremity. These compresses, when properly arranged, will be found *not opposite to each other, but the inner one commencing on a line opposite to that on which the outer one has terminated.* These being applied, the inner splint is next placed against the limb—the assistant shifting his hand to admit of this being done, without his relaxing in the least degree the extension until the limb is bandaged to this splint, when it will be found that the extension is well maintained. The outer splint is now to be applied and secured to the arm by the return of the roller. The principal use of the latter splint is to act upon the outer compress, and by its general pressure to weaken for the time the force of the resisting muscles. By the employment of these simple means, the indications in the treatment of this accident will be found to be fully met. The arm may be carried in a sling, and the patient permitted to walk about, &c. In three or four days the limb should be undressed and inspected; and whilst held so that relaxation cannot take place, the wrist and fingers are to be bent enough to preserve the flexibility of the joints. The dressings are then to be reapplied. These operations are thenceforward, for four or five weeks, to be repeated every day, adding to them the motions of pronation and supination.

The practice of keeping a limb in splints, with the joints in an immovable state for weeks, even when the fracture is remote from the articulation, cannot be too earnestly deprecated; and in cases where the injury to be repaired has involved a joint, such treatment is censurable to a high degree, as it is almost certain to destroy the mobility of it by promoting the adhesion of ligaments, the union of tendons with their thecæ, and by obliterating bursæ—evils never to be fully repaired. So prevalent is the error on this point, and so serious are the results of such practice, that I have settled my mind to the belief, that in very many cases of fractures the imperfect recovery of the patient is owing to the injudicious use of splints and bandages, rather than to the complication or original difficulty of the case. For the interruption of adhesions of the ligaments, for insuring a continuance of the muscular power and offices of the tendons, and for the entire preservation of the motions of joints, it is indispensably necessary that these parts should be put into action frequently during the treatment of a fracture in which they are interested, either from the adjacency of the fracture, or from their confinement by the splints necessarily used on the occasion. The movement of these parts by the surgeon at stated periods, is not at all incompatible with the quietude and the progressive reunion of the bone itself. The omission of this duty arises, I am persuaded, out of our knowledge of the necessity of securing rest to a broken bone, without at the same time considering

that by the means we employ, and the course we pursue to accomplish it, we may entail upon our patient a calamity quite as deplorable as that of an ununited fracture or a crooked bone—namely, a stiff and useless limb. The surgeon, then, is to recollect, that in the cases made herein the special subject of notice, he has not only the duty to perform of obviating deformity of the limb, but of preserving the free motions of all the other parts, and that this can be accomplished only by daily trials of their freedom and functions.

By an adherence to the plan of treatment just recommended, and by an attentive pursuance of the means spoken of to preserve the functions of the limb, I have uniformly succeeded in restoring perfectly the arm to its natural shape and offices. I can, consequently, on just grounds, advise others to adopt the same practice.

It sometimes happens, also, though rarely, that fracture of a similar character to the one just described, occurs on the *palmar side* of the radius, from the application of force against the back of the hand whilst it is bent forward to its ultimate degree. This usually happens in awkward attempts to parry the blow of a fist, from pressure in dense crowds, and from falling on the back of the hand whilst it is bent forward. Whenever the fracture takes place in front, the end of the radius projects over the wrist on the dorsal side, and the carpal bones and fragment rise out of their proper situations, and form the tumour on the palmar side, thus reversing the deformity of the arm. The principle in the treatment of this variety of the injury, is the same as in the foregoing.

Dupuytren used to trace an analogy between the ordinary fracture of the lower end of the radius, and fracture of the lower end of the fibula; and as he had founded a very successful method of treating the latter injury from the view he took of such cases, he extended his analogy to the treatment of the former by means and apparatus designed to accomplish the same ends. How far the practice may be successful when applied to the cases for which the practice was specially intended, I cannot say. Having myself found simpler means attended with success, I never adopted this practice; but for the treatment of fracture through the joint, &c., the practice would be unavailing. Neither is there any resemblance of this injury to the fracture of the fibula. It may be, however, not inaptly compared to the partial luxation of the foot, depending on fracture of the internal malleolar process of the tibia, including a portion of the articular face of the bone—an accident well known to surgeons.—*Med. Examiner.*

The late Dr. Joseph Parrish.—It is with regret that we have to notice the death of this eminent and greatly respected physician, which took place in this city on the 18th of March last, in the 61st year of his age.

When Dr. Wood shall have completed the task to which he has been appointed, we hope to present a biographical sketch of the deceased. In the meantime, for the gratification of his numerous friends, we insert the history of his case; and an account of the proceedings of the different public bodies with which he was associated, on learning the loss they had sustained.

Case of the late Dr. Joseph Parrish. Reported by Geo. B. Wood, M. D., Professor of Materia Medica in the University of Pennsylvania.

The following account of the case of the late Dr. Joseph Parrish is drawn up from memory, no notes having been taken during its progress.

When about twenty-five years of age, the Doctor was affected with a severe and lasting cough, and considered himself in danger of pulmonary consumption, to which he believed that he had a family predisposition, having lost a brother and sister by that complaint. Under a course, however, of vigorous exercise and free exposure to the air, without the use of medicines, he ultimately surmounted the threatening symptoms. The existence of cicatrices in the upper portions of the lungs, discovered upon post mortem examination, proves that his apprehensions were well founded, and at the same time affords strong evidence in favour of the plan of treatment which he adopted in his own case, and always strenuously advocated.

For many years after the disappearance of the pectoral affection, Dr. Parrish suffered much from dyspepsia, which continued with him even till middle life. But from this also he was at length relieved, and afterwards enjoyed good health, with the exception of occasional severe attacks of catarrh during the winter, and of irregular gouty or rheumatic affections, particularly of lumbago, which usually continued but for a short period. In one of these attacks, however, of irregular gout, which occurred about eleven years previously to his last illness, he was confined to his bed a long time, and suffered extremely. The disease appeared to affect chiefly his stomach, diaphragm, intercostal muscles, and upper extremities; and he was at one time considered in imminent danger. He had a slow convalescence, but recovered entirely, without any apparent relics of the disease, which could give rise to uneasiness. His predisposition to gout was thought to be hereditary.

It may be proper to mention, in reference to the state of the kidneys and prostate glands, revealed by dissection, that he laboured, during the greater part of his life, under more or less irritation of the urinary passages, and that the secretion of urine was more copious than is usual in health. He believed that in early life he had suffered from a slight attack of diabetes.

These preliminary facts are stated, as they may throw some light upon the character of the affection of which he died, and upon the phenomena observed after death.

The health of Dr. Parrish began to decline in the early part of last summer. He lost flesh, and felt uncomfortable, without being able to ascribe his condition to any particular cause. In August, 1839, he visited Saratoga, with the view of improving his health, and while absent from home, was attacked with a severe neuralgic affection of his lower extremities. This was so far relieved by opiates as to enable him to return to Philadelphia, but did not entirely disappear for several weeks. The chief seat of the affection was in the calf of the left leg. The pain was excruciating, but without heat, redness, or swelling of the part. It yielded to very copious local depletion, by means of leeches.

After this attack he never recovered his former health. His appetite was impaired, his bowels often costive, his sleep disturbed and not refreshing; and, though he continued to attend to his professional duties, he exhibited less energy than formerly, and in the afternoons was indisposed to exertion, sleeping much in his chair, and often waking up in a debilitating perspiration. Soon after the commencement of winter, he was seized with catarrh, which gradually increased, and at length became so severe as to render confinement prudent if not necessary. It was not, however, till about the first of January that he concluded to remain at home and try the effect of remedies.

He was now much more emaciated, had a pulse of about one hundred, and apprehended phthisis; and it was the conviction that he was predisposed to this complaint which had induced him to delay confinement. But the existing pectoral symptoms were obviously those of bronchial inflammation, and yielded very considerably to a slight mercurial impression produced by the blue pill. The general amelioration of his condition, under the influence of mercury, was indeed very striking. Expectoration, which was before deficient, became established, the cough was diminished in violence, and the pulse sunk down to the natural standard. He was so much improved as to be able to leave his house occasionally, and even to visit patients, when the weather was favourable. But he was still far from being well. The emaciation continued, and the cough, though moderated, did not altogether leave him, but took on a laryngeal character, as if the irritation which produced it was seated chiefly in the glottis. The pulse again became more frequent than natural, and he began to have a sallow hue, though the alvine evacuations and the urine were little, if at all, changed in colour. Petechiæ made their appearance pretty thickly upon the lower extremities, but were not permanent. Though the appetite was somewhat impaired, enough food was taken for healthy nutrition, had not some latent cause existed to disturb the process.

After exposure out of doors, and fatiguing professional exertion, on the 29th of February he became so much worse as to be confined to his room, which he

did not afterwards leave. His cough was now almost exclusively laryngeal, and occurred paroxysmally towards the close of the day, when it became exceedingly violent, and continued almost incessantly for hours. The sensation in his throat was such that he could scarcely convince himself that there was not a foreign body in the larynx. The slightest attempt to speak brought on violent convulsive attacks of coughing, which were attended with shooting pain in the throat, and not unfrequently also with vomiting, consequent, probably, upon the agitation of the parts about the fauces. The stomach was at length thrown into a state of sympathetic irritation, which continued even during the absence of the cough, so that scarcely anything swallowed could be retained. The pulse was now usually between ninety and one hundred, soft and moderately full; the skin soft and of a natural temperature; the tongue slightly furred and disposed to dryness; the secretion from the kidneys and liver very nearly healthy in appearance, though the evacuations from the bowels were sometimes rather too light coloured, and the urine rather too yellow. The sallowness and emaciation had somewhat increased, and a slight disposition to lethargy was observable, which appeared to have existed for some time previously, though it had not attracted particular attention. There was no unusual irritation of the urinary passages; no pain in the small of the back, nor in the right side or shoulder; no difficulty in lying in any position; very little, if any, tenderness in the right hypochondrium, in short, none of the usual evidences of inflammation of the kidneys or liver, though the lethargic symptoms, and the somewhat jaundiced condition of the skin and eyes, might seem to point to these organs as the seat of disease.

A blister was applied to the throat; the blue mass and hyoscyamus were taken in small doses frequently repeated; cream or milk, with lime water, was employed as food, and to allay the sickness of stomach. The gums soon became somewhat sore, without any material amendment of the symptoms, and the mercurial was omitted. An attempt was made to interrupt the paroxysms of coughing, by quinia; but this was omitted, after a few grains had been taken, in consequence of the irritation of stomach which it produced. With the same view, enemata of laudanum were administered in anticipation of the paroxysm for two or three days successively. This remedy produced the desired effect, and the harassing laryngeal cough ceased almost entirely, but the irritation appeared merely to have receded, and the increase of the lethargic symptoms, and the almost constant sleepiness which came on, indicated, but too plainly, that it had been transferred to the membranes of the brain.

Up to this period, Dr. Parrish, though occasionally seen by medical friends, had kept the management of the case in his own hands. Drs. Wood and Otto were now called into consultation with Dr. Isaac Parrish; though even till within two days of the close of the disease, the mind of the patient, when sufficiently aroused, acted with entire clearness, and his opinions were necessarily allowed some weight in the treatment. Towards the close of the case, Dr. Hewson was associated in the consultation.

A few leeches were applied to the temples, and mustard to the feet. Calomel was given in minute and frequently repeated doses, and the diet was continued as before. The drowsiness was somewhat diminished, and the stomach became more retentive, but the case was complicated by the occurrence of singultus, which gradually increased, and soon became one of the most prominent symptoms, continuing, with occasional interruptions, till a day or two before death. Neuralgic pains also occurred in the left thigh and leg, and some soreness was observed along the upper part of the spine. The latter affection increased by degrees, occupying chiefly the back of the neck and the left shoulder, and became at length so severe as greatly to impede motion. Towards the close of the case, it constituted almost the sole source of complaint.

The remedies employed were chiefly calomel in small doses, as before; musk; creosote, assafoetida by enema, and other antispasmodics, for the relief of the hiccough; magnesia and rhubarb, with terebinthinate enemata, as laxatives; blisters to the extremities, and over the stomach; acetate of morphia in small quantities to the blistered surface in the epigastrium, and dry cups to the back

of the neck, with the abstraction of an ounce or two of blood from the same part. The diet consisted chiefly of cream and chicken broth. There was a constant desire for cold drinks, in which the patient was indulged, carbonic acid water being preferred, as it quieted the irritability of the stomach. Opiates, moderately given, relieved distress without increasing stupor, but were thought to be followed, when their immediate effects went off, by an increase of nausea, and were used as little as possible. The loss of blood, though indicated by some of the local symptoms, was forbidden by the steadily increasing prostration, and even the slight local bleeding was not well borne.

The treatment seemed to have no other effect than a temporary alleviation of the distressing symptoms. The disease marched steadily onward. The lethargy increased, the skin became quite jaundiced, the abdomen tympanitic, the pulse more frequent and feeble, and the bowels obstinately constive. Subcutaneous tendinitis came on, but there was no paralysis. The only additional remedies employed were the oil of turpentine, and aromatic ammoniated alcohol. Towards the end of the complaint the sight and hearing were greatly impaired, and for twenty-four hours before death seem to have been altogether lost. In the midst of the lethargy there were evidences of considerable physical uneasiness, but this entirely disappeared during the last three or four hours, and life was gradually extinguished without convulsions, or other distressing symptoms.

Death occurred on the 18th of March.

Notes of an examination of the body of Dr. Joseph Parrish, March 19, 1840, thirty-two hours after death. Present Drs. Otto, Wood, Ashmead, Peacock, Gerbard, Kirkbride, Barton, and West.

Jaundiced tint of skin.—Emaciation of face very decided,—no infiltration.

Head.—Scalp unusually dry and bloodless; the yellowness extending to the pericranium: adhesion of dura mater to cranium unusually strong; veins of upper part of brain nearly empty; at least three ounces of serum exuded from beneath the arachnoid; this membrane upon its upper surface *semi-opaque*, and elevated by the effused serum; arachnoid not adherent, cloudy, not granulated, quite pale; convolutions distinct, pale, firm; consistence of upper part of cerebrum even greater than usual; both substances extremely pale, with a faint, yellowish tinge; cortical substance projecting above the level of the medullary, and rather disproportionately firm; cerebral substance, in general, extremely firm. One or two drachms of serum in the ventricles. *Plexus Chorioidei* moderately injected. *Thalami* and *corpora striata* firm and normal.

Base of brain offered about two ounces of serum; appearance of this part remarkably healthy, with barely average injection. The membranes are scarcely injected or opaque; substance of brain and cerebellum pale and firm.

Thorax.—On right side some adhesions are found posteriorly, with effusion into pleura of half a pint of reddish serum. The right lung at its summit presents an irregular puckered depression, which is firm and opaque; upon cutting into it, there is found a substance for the most part of a dirty grayish colour, nearly cartilaginous in consistence, with some grains of a calcareous matter in it, evidently the cicatrix of an old tubercular cavity of small size. From the back part of this depression there extends another one, which is more irregular, running round the lung, and connected with similar deposit. Upon stretching and pulling the lung slightly, cellular tissue may be discovered passing through this hardened mass, and apparently constituting it. Several large vessels may be seen passing around the above cellular substance; one or two slighter depressions of the same kind are found in the adjacent parts of the lung. The substance of the lung generally is gorged with serum, crepitous, and contains air; the vessels are more or less enlarged; the pleura of the upper third of the lung is more or less opaque, giving to the whole of this portion of the lung a peculiar wrinkled aspect, less marked, however, than at the summit. The mucous membrane of the bronchial tubes, opaque, jaundiced, but not reddened.

Left Lung.—Nearly as much serum in the pleural cavity of this side as in the right one, of same character; the lung free from adhesions; its lower lobe more engorged with blood than the right, but containing less serum; still crepitous

throughout; upper lobe in its lower three-fourths paler than natural; some emphysema along its anterior margin; tissue engorged with bloody serum; containing air; its upper one-fourth hardened and puckered, but less so than on the right side; whole tissue somewhat solid and condensed. Several masses of cellular substance of the same colour as those in the right lung are found in it, two of which are particularly well defined, and present an irregular central nucleus, one-eighth of an inch in diameter, from which run radii, of firm cellular substance; appearances still more characteristic of cicatrization. No recent tubercular granulations, nor any trace of recent tubercular deposition are any where discoverable.

Heart.—The pericardium contains about two ounces of bloody serum; the surface of heart is remarkably free from opacity; no adhesion of pericardium, except slightly at the vessels; left ventricle soft, slightly jaundiced; a little thickening about the mitral valve. Semi-lunar valves flexible, but a little cartilaginous at their base, not, however, sufficiently to interfere with their action. Some cartilaginous deposit beneath the inner membrane of the aorta immediately above the valves. Right ventricle of the same colour with the left; stained somewhat yellowish; valves flexible.

Abdomen.—The peritoneum contains more than a quart of reddish-yellow serum. The liver is extremely irregular in outward appearance; its surface is completely studded with irregularly rounded elevations. Some of these are about the size of grains of rice, others two or three times as large. The left lobe is shrunken to half its size; the right a little less than usual. The tissue of the liver is extremely heavy and condensed. The tuberosities of its substance are more marked in the left than in the right lobe, and vary in size from a pin's head to a hazel-nut. The colour is a light fawn—cellular substance much atrophied. The seat of the morbid deposit is evidently in the acini, which vary extremely in size. The blood in the vessels of the liver is thin and watery. The left lobe, when incised, is paler than the right one, and the extreme cartilaginous firmness is even better marked in it. The granulations of the substance are also much more distinct and numerous in the left lobe. The liver is *not* fatty, but on the whole presents a remarkable specimen of that peculiar change in its structure termed *cirrhosis*. The bile is thin and greenish; in the gall bladder are found *six* dark green mulberry calculi, about the size of peas—the lining membrane of this part is thin and pale.

Spleen.—Rather firmer than natural; six inches by four.

Stomach.—Of a greenish and reddish colour at its great cul-de-sac, evidently from commencing decomposition; it contains a little thin mucus; its cardiac extremity is of a deep red colour, chiefly from imbibition; its lining membrane has been finely injected—not softened; rest of its surface marbled with red and green, mamellated and slightly thickened. (*Note.*—The commencing state of decomposition of the stomach makes these lesions rather doubtful, but evidently this organ has been the seat of chronic inflammation and thickening.)

Kidneys.—Left one very large, with great abundance of fat about it; upon removing it, we opened into a sac which was filled with purulent liquid; the sac containing the pus occupies half the anterior, and the whole posterior of the kidney, except at its summit—it is formed by the proper membrane of the kidney, which is detached from it, and in this way constitutes the abscess. The posterior part of the kidney presents, near its inferior extremity, an adhesion an inch and a half in diameter, rounded, the membrane adjoining it is evidently a purulent membrane, which here and there has small, rounded ulcerations in it.

The yellow spots, observable on its surface, connected with the membrane of the kidney, and forming the points of adhesion to it, constitute the exterior of the masses of purulent infiltration into the cortical substance of the kidney. The cellular substance of the kidney remains, but no trace is to be found of the true renal structure; near, and above this, is another purulent infiltration of irregular size, of which there are several throughout the cortical portion, constituting, in fact, small abscesses, the largest of which will contain an almond. About one-fourth of the kidney retains, in part, its normal appearance, but is

filled with the yellow granulations of the acini, which are evidently those of Bright's disease. The exterior of this portion of the kidney presents a yellowish ochagrined appearance from the projection of the same granulations. The whole of the kidney is enlarged about one-third, lobulated; the ground work of it is of a more livid colour than usual, and soft.

Right Kidney about of natural size; investing membrane adheres closely to it; on separating it, the same yellow points, mentioned before, were observed, some of which are from one-half to three-quarters of an inch broad, prominent, soft, and, on penetrating them, they are found to be filled with pus of perfectly healthy appearance. The substance of the kidney, generally, is of a deep red colour, dotted with darker brownish points; at the posterior and inferior part, on detaching the membrane, we open into an abscess containing about two ounces of perfectly creamy, laudable pus, which is contained in a similar infiltrated mass, formed by the cellular substance, here and there thrown into *poches*, (very similar to forming abscesses in the lungs,) which do not seem to communicate with the calices of either kidney. The rest of the kidney, in its cortical substance, is filled with minute granulations; less marked, however, than in the left one; the cortical substance is soft, reddish, and evidently inflamed.

Bladder very nearly natural; slight roughness of its lining membrane, at its inferior portion, like grains of sand on it.

Pancreas contains more blood than usual; harder; ecchymosed throughout; lobules firmer than usual, harder.

Prostrate gland not enlarged, its texture changed internally in about one-half of it, to an almost cartilaginous firmness, of a yellowish tinge, not grating under the knife; upon squeezing it, a purulent fluid is poured out, apparently the secretion of the glands; upon cutting into it, the same fluid is seen in small points through it.

Large intestines opened in several places; contain yellow faeces; mucous membrane of a slate colour; no ulceration found at any point observed.

Small intestines of same appearance, apparently perfectly healthy.—*Med. Exam.*

Tributes of Respect to the late Dr. Parrish.—At a special meeting of the Managers of Wills Hospital, held on the 18th instant, the Secretary having announced to the Board that a dispensation of Divine Providence had removed from among them their late respected fellow citizen and beloved associate, DR. JOSEPH PARRISH, the following resolutions were unanimously adopted:

Resolved, That this Board have received with deep emotion, the painful intelligence of the demise of their much esteemed and lamented fellow member, Dr. Joseph Parrish.

Resolved, That being fully sensible of the worth of their deceased colleague, and of the valuable services he has rendered to this institution since its first organisation—during the whole of which period he has been called upon to preside over the deliberations of this Board—we do now direct to be recorded upon the minutes this expression of the high esteem in which his surviving associates have ever held the virtues, talents, and public usefulness of the deceased, and the deep regret they experience for his loss, as a valuable member of this Board, an enlightened Philanthropist, a distinguished Physician, and a sincere and consistent Christian.

Resolved, That we deeply sympathise with the family and relatives of the lamented deceased in their severe affliction: and that the Secretary of this Board be requested to transmit to them a copy of these resolutions, with a letter expressing, on behalf of his colleagues, their sincere condolence with them, on this their melancholy bereavement.

Resolved, That when we adjourn, it will be to meet at the late residence of the deceased, at the hour appointed for his funeral, and that we attend the same in a body.

FREDERICK ERRINGER, *President, pro tem.*

M. C. SHALLCROSS, *Secretary.*

At a special meeting of the Philadelphia Medical Society, held on the 19th

of March, 1840, the Vice President Professor S. Jackson being in the chair, the following preamble and resolutions were adopted:—Whereas,

It appears to be proper to this society that upon the decease of an eminent member of this body, some expression of the sentiments of his remaining brethren upon the occasion should be made public; and, whereas, it hath pleased the Divine Providence to remove from this world our late esteemed and beloved member JOSEPH PARRISH, M. D., it is therefore,

Resolved, That we have heard with profound regret of the decease of that eminent physician, whose professional skill, humanity, and liberal, and just conduct, have long endeared him to us and to the profession at large in this city.

Resolved, That we deplore the loss of a physician, whose long career in the practice of his art, has been distinguished by the most brilliant success, accompanied by a modesty and ingenuousness of conduct, which secured to him the affectionate attachment of the medical profession in this city, as well as their highest respect.

Resolved, That a member of this Society be requested to prepare and deliver before this body, a biographical account of the deceased, in order that, although his present and living example has ceased from among us, some permanent memorials may be secured, of a life which hath been highly useful to the medical body, by a pure example of morals; by great attainments in medicine and surgery, and by a rare moderation fit to be preserved as the model of a wise, benevolent and upright physician.

Resolved, That the members of the Society wear crape on the left arm for thirty days as a testimony of their feelings, as expressed in the foregoing resolutions.

Resolved, That the members of the Society will attend the funeral of the deceased, to-morrow afternoon, at three o'clock, and that we hereby invite the physicians of this city, to meet with us at our Hall, in order to join with us in the manifestation of due respect to the deceased.

Resolved, That a committee of three members be appointed to present a copy of these resolutions to the family of the deceased.

C. D. Meigs, M. D., R. Coates, M. D., and Caspar Morris, M. D., were then appointed a committee to carry into effect the object of the last resolution.

On motion of Dr. C. Morris, seconded by Dr. West,

Resolved, That Dr. Geo. B. Wood be respectfully requested to prepare the memoir contemplated in the above resolutions.

On motion of Dr. T. S. Kirkbride,

Resolved, That an account of the proceedings of this meeting be published in the medical periodicals of this city, and in the city morning papers of to-morrow.
EDWARD HARTSHORNE, Junr. *Recording Secretary*.

At a meeting of the former pupils of the late Dr. Joseph Parrish, held at the hall of the Medical Society, on the 21st of March, 1840, Professor Wood was called to the Chair, and Dr. Norris appointed Secretary.

The following resolutions, offered by Professor Morton, were adopted:

Resolved, That we contemplate with feelings of unfeigned sorrow the demise of our venerated friend and preceptor, Joseph Parrish, M. D.

Resolved, That we regard the death of this estimable man as a severe loss, not only to the medical profession but to the community at large, and above all to ourselves, who have been instructed by his precepts and fostered by his kindness.

Resolved, That an intimacy of many years continuance has tended more and more to enhance our esteem for his many virtues, his amiable manners, and his professional skill.

Resolved, That a copy of these resolutions be presented to the family of Dr. Parrish, with the assurance of our sincere sympathy for the afflictive bereavement they have suffered in his death.

Professor Morton, and Dr. Yardly were then appointed a committee to carry into effect the last resolution.

On motion of Dr. Yardly, it was

Resolved, That this meeting cordially unite with the Medical Society, in the

appointment of Professor Wood (one of our number) to prepare a biographical memoir of our lamented perceptor; believing that he will do full justice to his superior ability as a teacher of medicine and surgery, as well as portray his exalted and endearing character as a physician, his worth as a man, and his virtues as a Christian.

Resolved, That we will in a body attend the reading of said memoir at such time and place as Dr. Wood, and the Medical Society may select.

On motion of Dr. West,

Resolved, That the proceedings of this meeting, be published in the medical periodicals and newspapers of the city. GEO. W. NORRIS, *Secretary*.

Extract from the minutes of a meeting of the Philadelphia College of Physicians, held on the 7th of April, 1840.

"The President announced the death of Dr. Joseph Parrish, the Vice President of the college, which occurred on Wednesday morning, March 18th at 9 o'clock; whereupon Dr. Condie offered the following resolutions, which were unanimously adopted.

Resolved, That the College deeply deplores the loss it has sustained, by the death of its late venerated Fellow and Vice President Dr. Joseph Parrish.

Resolved, That Dr. George B. Wood, be respectfully requested to present to the College, a notice of the life and character of the deceased."

HENRY BOND, *Secretary*.

At a meeting of the Pathological Society of Philadelphia, held on the 30th of March, 1840, the following resolutions were adopted:

Resolved, That the Pathological Society, have learned with deep regret the demise of their respected associate member, Dr. Joseph Parrish, whose philanthropy, and devotion to the science of medicine, have for so many years commanded the high respect and regard to the members of his profession, and will ever be remembered by them with the liveliest gratitude.

Resolved, That the Society highly appreciate the importance of the directions given by Dr. Parrish, that his body should be examined, believing that the example is one which is eminently conducive to the advancement of the science of medicine, and to the deepest interests of humanity. G. W. NORRIS, *Sec.*

Complimentary Resolutions to Dr. W. W. GERHARD.—[We take pleasure in giving a place to the following communication. Of the value and importance of clinical instruction, but one opinion can be entertained, and from what we know of the zeal, talents and acquirements of Dr. Gerhard, we are sure that the compliments conveyed in the resolutions are entirely merited.]

A portion of the medical class of the University of Pennsylvania, who have attended the lectures at the Philadelphia Hospital, being desirous of expressing their sense of the value and importance of clinical instruction, and of their obligations to Dr. W. W. Gerhard, for the able course of Lectures delivered by him at that institution during the present session, have met together for that purpose. Therefore,

Resolved 1st, That we consider clinical instruction the most important method of teaching the pathological states of the system, and of familiarising the mind of the student with the means of correcting the aberrations from the standard of health.

2d. That we consider the course of lectures, now being delivered on clinical medicine at the Philadelphia Hospital of great value, particularly because of the truly scientific, as well as practical manner in which diseases involved in much obscurity, are elucidated.

3d, That we consider Dr. Gerhard eminently qualified to give instruction in clinical medicine and pathological anatomy, and that we particularly admire his unequalled skill in illustrating the diseases of the thoracic organs.

4th, That a committee of ten be appointed to present a copy of these resolutions to Dr. Gerhard, and to tender him our thanks for the zeal and ability, which he has manifested in the interests of the class.

5th, That these resolutions be signed by the Chairman and Secretary, and that a copy of them be presented to the faculty through their dean.

6th, That a copy of these resolutions be also sent to the Medical Journals and newspapers of this city, with a request that they publish them.

The Committee appointed under the fourth resolution consists of the following Gentlemen:—Drs. C. Quarles and R. Kownselar, and Messrs. T. B. Lamar, M. A. Page, T. R. Spencer, W. H. Van Buren, Allen Gunn, H. Selden, T. L. Walker, and J. R. Justice. On motion the Chairman and Secretary were added to the committee.

J. A. PLEASANTS, M. D. *Chairman.*

L. S. JOYNES, M. D. *Secretary.*

University of Pennsylvania.—The matriculants in the Medical Department at the past Session numbered 444; of whom there were from Alabama 24, British Provinces 2, District of Columbia 2, Delaware 7, Georgia 17, Ireland 2, Illinois 1, Indiana 2, Kentucky 2, Louisiana 5, Maryland 12, Mississippi 7, Missouri 3, New England 8, New Jersey 18, New York 12, North Carolina 63, Ohio 6, Pennsylvania 44, Philadelphia 55, South Carolina 9, Tennessee 29, Virginia 111, West Indies 1, England 2.

At a Public Commencement, held April 3d, 1840, the Degree of Doctor of Medicine was conferred upon the following gentlemen.

NAMES.	RESIDENCE.	SUBJECT OF ESSAY.
Addison, Kendall F.	Virginia,	General Inflammation.
Alldredge, James F.	Georgia,	Intermittent Fever.
Allen, John M. M.	Philadelphia,	Varioloid.
Anderson, Edward H.	South Carolina,	Gastritis.
Anderson, Robert M.	Virginia,	Effects of civic life.
Anderson, William W.	Virginia,	Malaria.
Barksdale, Randolph E.	Virginia,	Respiration.
Barr, John A.	Delaware,	Pleuritis.
Barry, Thomas	Indiana,	Light.
Battle, Thomas W.	Georgia,	Yellow Fever.
Baum, Andrew D.	Philadelphia,	Dyspepsia.
Benedict, Nathan D.	New York,	Mineral waters.
Binford, Walter L.	Virginia,	Gun-shot wounds.
Blow, William James	North Carolina,	Acute Rheumatism.
Bolton, Charles	Pennsylvania,	Compression of the Brain.
Booth, William A.	Tennessee,	Abortion.
Brent, Thomas S.	North Carolina,	Opium.
Brigga, John Robert	Virginia,	Pneumonia Biliosa.
Bryan, Joseph Rhodes	Philadelphia,	Scarlatina.
Bryan, William T.	North Carolina,	Dysentery.
Byrne, Patrick Henry	Alabama,	General Treatment of Intermittent and Remittent Fevers.
Cauthorn, Lucius H.	Virginia,	Diarrhœa.
Chaloner, Aaron D.	Philadelphia,	The best mode of detecting poisoning by arsenic.
Childers, Erasmus R.	Georgia,	Apoplexy.
Christian, James R.	Tennessee,	Fractures.
Cole, Meriwether H.	Tennessee,	Asthma.
Cole, William	Virginia,	Rubeola.
Cooper, Lewis D.	North Carolina,	Opium.
Crawford, John J.	Virginia,	Traumatic Hemorrhage, and its means of arrestation.
Currey, Richard O.	Tennessee,	Iron.
Curtis, Charles F.	Alabama,	Medicine as it flourished in Arabia.
Day, J. Lawrence	New Jersey,	Counter irritants as remedial agents.
Delany, P. Benson	Delaware,	Physiological effects of atmospheric temperature.
Doggett, John B.	North Carolina,	Dyspepsia.
Donnelly, John J.	Virginia,	Acute Hepatitis.
Dulaney, Abraham G.	Virginia,	Dysentery.
Dunlap, Joseph B.	Philadelphia,	The means of arresting Hemorrhage.

NAMES.	RESIDENCE.	SUBJECT OF ESSAY.
Edmondson, William J.	Virginia,	Influence of mental emotions in the production and cure of disease.
Eppes, Benjamin F.	Virginia,	Scarlatina.
Faulkner, Leander	Virginia,	Congenital Hydrocephalus.
Featherston, Edwin C.	Tennessee,	Caries of Spine.
Feild, Richard Dunn	Virginia,	Variola Vaccina.
Flanner, Thomas J.	North Carolina,	Scarlatina.
Gamble, James H.	Ireland,	Ooaniasm.
Garrett, Richard W.	Alabama,	Mammary Abscess.
Gee, Lucas	Mississippi,	Carbon.
Glass, Robert	Tennessee,	Anatomy & Physiology of the Liver.
Griswold, Alexander S.	Michigan,	Difference between Apoplexy and Narcotic poisoning.
Gunn, Allen	North Carolina,	Abortion.
Hamner, Austin M.	Tennessee,	Cholera Infantum.
Hardy, Benjamin F.	Philadelphia,	Delirium Tremens.
Harrison, George M.	Illinois,	Chylopoietic derangement.
Harrison, John H.	Mississippi,	Otitis Interna.
Hartshorne, Edward	Philadelphia,	Pseudarthrosis.
Hastings, John	Philadelphia,	Fractures of the Extremities.
Headen, Isaac B.	North Carolina,	Acute Dysentery.
Herdson, Dabney	Virginia,	Urinary Calculi.
Heterick, Alexander B.	Virginia,	Tetanus.
Hicks, Benjamin I.	Virginia,	Tubercles in the Brain.
Inge, Richard J.	Alabama,	Cholera Infantum.
Irwin, William T.	Virginia,	Cynanche Laryngea.
Jackson, William W.	Alabama,	Menstruation.
Jennings, Robert M.	Virginia,	Pathology of the Cellular Tissue.
Johnson, William Q. (M.D.)	Virginia,	Asiatic Cholera.
Jones, George F.	Tennessee,	Dysmenorrhœa.
Joyner, Noah	North Carolina,	Rubeola.
Justice, John R.	North Carolina,	Acute Dysentery.
Kenney, William H.	Pennsylvania,	Intermittent Fever.
King, Nathaniel M.	Maryland,	Scrofula.
Lake, Thomas	South Carolina,	Etiology and Pathology of Dropsy.
Lamar, Thomas B.	Georgia,	Blood-letting.
Lang, Edmund	New York,	Iritis.
Lawson, Mordecai	Virginia,	Colica Biliosa.
Leaming, Coleman F.	New Jersey,	Hybernation of animals.
Lewis, Elisha J.	Philadelphia,	Tubercles.
Lewis, John E.	Georgia,	Bilious Remittent Fever.
Lindsay, William D.	North Carolina,	Counter Irritation.
Lippincott, Franklin	New Jersey,	Intermittent Fever.
Lyman, J. Huntington,	Massachusetts,	Paralysis.
Martin, William F. B.	Virginia,	Epilepsy.
Marye, James B.	Virginia,	Variola.
Mather, George	Louisiana,	Asiatic Cholera.
Miller, Jos. Hollingsworth	Ohio,	Milk-sickness.
Miller, Joseph S.	North Carolina,	Coxalgia.
Morrill, Henry Edwin	Ohio,	Formation of Medical Character.
Morris, Barton W.	Virginia,	Curvatures of the Spine.
Morton, John Watson	Tennessee,	Gonorrhœa.
Muller, William H.	Pennsylvania,	Nervous system.
Murphy, George W.	Indiana,	Milk-sickness.
M'Cain, James W.	North Carolina,	Neuralgia.
M'Cartee, Davis Bethune,	Pennsylvania,	Variola.
M'Coy, Gilbert R.	Pennsylvania,	Metastasis.
M'Dowell, Augustus W.	Philadelphia,	Jaundice.
M'Kee, William H.	Philadelphia,	Diabetes.
M'Lane, George R.	Delaware,	Hernia.
M'Phosters, William M.	North Carolina,	Scrofula.
Neal, Ebenezer	Philadelphia,	Typhus Fever.
Neill, John	Philadelphia,	Diseases of the Eye.

NAMES.	RESIDENCE.	SUBJECT OF ESSAY.
Nelson, Robert C.	Virginia,	Continued Fever.
Newbold, George L.	New Jersey,	Dyspepsia.
Norris, James	Virginia,	Acute Peritonitis.
Park, John S.	Tennessee,	Cachexia Africana.
Patton, William N.	Virginia,	Menorrhagia.
Pawsey, George	England,	Fistula Lachrymalis.
Payne, Richard A.	Virginia,	Intermittent Fever.
Percy, John W.	Alabama,	General and Pathological Anatomy of the Arteries.
Perry, John C.	North Carolina,	Croup.
Pettus, John R.	Virginia,	Acute Hepatitis.
Powell, Jesse C.	North Carolina,	Acute Dysentery.
Pugh, Joseph H.	Louisiana,	Acute Hepatitis.
Purdum, James A. L.	Alabama,	Pulmonary Tubercles.
Rawlings, George C.	Virginia,	Irritable Uterus.
Rawson, La Quinio	Ohio,	Intermittent Fever.
Read, Adolphus W.	Virginia,	Scarlatina.
Reilly, Thomas A.	Philadelphia,	Cholera Infantum.
Roberts, John W.	Virginia,	Acute Gastritis.
Roberts, William	New York,	Abscess and tendency of pus to the surface.
Rowland, Joseph	Pennsylvania,	Tetanus.
Sangster, Alexander J.	Virginia,	Variola.
Scruggs, Robert A.	Virginia,	Acute Hepatitis.
Seal, Charles L.	Pennsylvania,	Trachitis.
Shelly, William A.	Pennsylvania,	The congenital club-feet of children.
Shelton, Thomas D.	Virginia,	Surgical means of suppressing Hemorrhage.
Shelton, John D.	New York,	Effects of Malaria.
Sheppard, John M.	Virginia,	Dysentery.
Simpson, Richard F.	Virginia,	Dysentery Acuta.
Smart, Barleigh	Maine,	Scrofula.
Smiley, Alexander H.	Tennessee,	Apoplexy.
Smith, Francis G. Jr.	Philadelphia,	Delirium cum Tremore.
Smith, James C.	North Carolina,	Delirium Tremens.
Smith, Samuel M.	Ohio,	Blood-letting as a Diagnostic.
Smith, Samuel T.	New York,	Hydriodate of Potassa.
Smith, Solomon W.	Virginia,	Pneumonia Biliosa.
Spencer, Thomas R.	New York,	Typhoid Fever.
Stearns, Charles W.	Massachusetts,	Eclecticism in Medical Science.
Stocker, Anthony E.	Philadelphia,	Osteology.
Stokes, Young C.	Mississippi,	Acute Hepatitis.
Stout, Josiah W.	Tennessee,	Veratrina.
Swoope, William M. (M.D.)	Virginia,	Modus Operandi of Poisons.
Taylor, Arthur K.	Tennessee,	Vermineous Affections.
Taylor, William J.	New Jersey,	Hydrophobia.
Terrell, John C.	North Carolina,	Cholera Infantum.
Thomas, William G.	North Carolina,	Unavoidable Uterine Hemorrhage.
Thompson, Foster H.	Alabama,	Fracture of the Clavicle.
Thompson, John	North Carolina,	Trachitis.
Thorp, William	North Carolina,	Secale Cornutum.
Trexler, Leaser	Pennsylvania,	Vaccination.
Van Buren, William H.	Philadelphia,	Immoveable Apparatus.
Van Deursen, John H.	New Jersey,	Burns.
Walker, Anselm N.	Georgia,	Spinal Neuralgia.
Walker, James Alexander	Kentucky,	Scarlatina.
Walker, Thomas L.	Virginia,	Serous Tissues.
Weaver, James	Tennessee,	Animal Heat.
Wilkins, Alexander M.	Alabama,	Typhus Fever.
Williams, James L.	Alabama,	Congestive.
Womack, James G.	North Carolina,	Bilious Congestive Fever.
Womack, William B.	Tennessee,	Pleuritis.
Woodley, Thomas (M. D.)	Virginia,	Sthenic Pneumonia.

NAMES.	RESIDENCE.	SUBJECT OF ESSAY.
Woodson, W. Moncreaf	Virginia,	Scarlatina

At the commencement, held July, 1839, the Degree of M. D. was conferred on

NAMES.	RESIDENCE.	SUBJECT OF ESSAY.
Alexander Archer,	Virginia,	Acute Dysentery.
Charles Kershaw,	South Carolina,	Intermittent Fever.
William Augustus Newell,	New Jersey,	Glossitis.
William F. Pratt,	South Carolina,	Acute Rheumatism. Total, 163.

Transylvania University.—The number of students in the medical department during the past session was 257; of whom there were from Kentucky 117, Tennessee 35, Alabama 25, Georgia 13, South Carolina 10, Mississippi 12, Indiana 8, Missouri 7, Ohio 7, Virginia 5, North Carolina 3, Illinois 3, Pennsylvania 3, Louisiana 2, Maryland 1, Michigan 1, Wisconsin 1, Alabama 1, Texas 1.

At a public commencement held 14th March, 60 were graduated doctors in medicine, and at the same time the honorary degree of M. D. was conferred on Dr. Samuel K. Sharpe of Maysville, Kentucky, and Dr. J. C. Williams, of New Orleans.

Medical College of the State of South Carolina.—There were one hundred and ninety-three students in attendance on the lectures in this school, during the past session. Of these there were from South Carolina 133, Georgia 32, North Carolina 14, Alabama 11, Mississippi 2, Virginia 1, Florida 1.

At the termination of the course, the degree of M. D. was conferred on 63.

Medical Institute of the city of Louisville.—At session 1839—40, number of students 204; of whom were from Kentucky 67, Tennessee 48, Alabama 24, Indiana 18, Mississippi 15, Illinois 9, Missouri 7, Ohio 7, Virginia 3, Louisiana 1, Georgia 1, South Carolina 1, North Carolina 1, District of Columbia 1, England 1.

Medical Institution of Geneva College.—Session 1839—40. Number of students 81; graduates 19.

New Work preparing for Publication.—We learn that Messrs. Lea & Blanchard will re-publish the LIBRARY OF MEDICINE, conducted by Dr. TWEEKIE, with the assistance of numerous contributors of known and acknowledged abilities. This series will treat of each department or division of medicine in separate volumes; each series forming a complete work on the subject treated of, and to be authenticated by the name of the author.

This work is to be issued in London, and as fast as received in this country it will be placed in the hands of competent persons for revision, and such additions, or notes, as the works may require. It will be printed in a cheap form, so that any work or treatise can be had separately.

The first volume of the first series, PRACTICAL MEDICINE, will soon be ready.

Contents of Vol. I.—PATHOLOGICAL INTRODUCTION.—Dr. Symonds.

Part I.—INFLAMMATION.—Dr. Alison.

Part II.—FEVERS: General Doctrines of Fevers.—I. PRIMARY FEVERS.—1. Continued Fever—Synocha, or Inflammatory Fever—Synochus, or Mixed Fever—Typhus, or Adynamic Fever.—Dr. Christison.—Plague.—2. Intermittent Fever—Tertian—Quotidian—Quartan.—3. Remittent Fever—Marsh Remittent—Yellow.—Dr. Shapter.

II. IRRITATIVE FEVERS.

Gastric Remittent Fever of Children.—Dr. Locock.

Hectic Fever.—Dr. Christison.

III. ERUPTIVE FEVERS.

Small Pox and Vaccination.—Dr. Gregory.

Measles—Scarlet Fever.—Dr. G. Burrows.

ADVERTISEMENT

FOR A

NEW SERIES

OF

THE AMERICAN JOURNAL OF MEDICAL SCIENCES.

A New Series of this Journal will commence with the next Number, which will be published *January 1st, 1841*. These changes, it is believed, will be agreeable to the friends of the Work. The commencement of a New Series will afford an opportunity to many to subscribe to the Journal, who are anxious to do so, but are unwilling to possess an incomplete series, or to purchase so many back volumes. The extent also to which this work has now reached, 52 Nos., renders the cost of the whole greater than many young physicians are able to incur; and further, some of the Numbers are nearly exhausted and in a short time complete copies cannot be furnished.

The change in the months of publication is made in order to obviate the misconceptions and confusion that has frequently arisen from the year of the Journal having hitherto commenced with the November Number. No Number will consequently be issued before the 1st of January next, which will be the commencement of a new year.

The Journal will continue under the same editorial management as heretofore, and no change will be made in its aim or principles, but such improvements will be introduced into the plan as the enlarged experience of the editor and his able colleagues may suggest.

The great object proposed in the institution of this Journal was to establish a NATIONAL WORK, devoted exclusively to the improvement of Medical Science, and to the elevation of the character and dignity of the profession, to the entire rejection of all local and individual interests and party views. To accomplish this, a number of the most distinguished men in various parts of the Union associated, and have contributed to its pages the rich results of their experience. The object aimed at has been attained, and this Journal is regarded by the great mass of the American medical profession as their representative, and as such is received and quoted abroad.

The first part of each Number consists of original memoirs and cases, in the selection of which those of a practical tendency have always the preference.

The department of Monographs which has given so much satisfaction will be continued, and every effort made to increase its interest and usefulness by the selection of subjects of practical importance. Monographs on scarlet fever, laryngitis, bronchitis, and other important diseases are in preparation.

The Reviews and Bibliographical Notices, present critical and analytical accounts of the principal works, domestic and foreign. In this department entire freedom of criticism is allowed, always however, marked by candour, and in that

courteous tone which alone comports with the true dignity of science. The articles are always authenticated by the writer's signature, which, as it secures to him the credit of his labour, affords a stimulus to perform it well, and at the same time subjecting him to the responsibility of authorship, affords a security against hasty opinions. The editor also exercises the strictest watchfulness over these departments, to exclude all personalities and undue harshness of expression, and to prevent the influence of personal friendships or private enmities.

The Summary contains a condensed digest of the discoveries and improvements in every branch of the healing art, and as the means at the disposal of the editor are unusually ample, this department is particularly useful and interesting. We are happy to announce that Dr. T. R. Beck, well known as the author of one of the best works on Medical Jurisprudence extant, will contribute to this department a summary of all the discoveries and improvements in the important branch to which he has devoted so much attention.

The period of publication will be *Quarterly* as hitherto, as this is believed to possess great advantages, in allowing of the insertion of elaborate and comprehensive memoirs entire, which can not be inserted in a weekly journal of small size, or if published, could only be so in detached pieces, which destroys their interest and impairs their value. It affords also time to compare the various accounts of discoveries, and thus to select the best and most authentic. The very extensive correspondence of the editor, and the numerous journals he receives, with the arrangements that are made to have them forwarded by the speediest conveyances, enables him to give early intelligence of every novelty.

Established on a broad and liberal foundation, and favoured by the support of many of the most distinguished men in every part of the Union, this Journal will continue to be devoted exclusively to upholding the dignity and advancing the great interests of the profession.

Practitioners in every part of the Union, disposed to aid in the advancement of Medical Science, are invited to contribute the results of their experience. All articles inserted will be liberally paid for, and such persons as are disposed to aid in the circulation of the work, are requested to hand this prospectus among their medical friends.

The subscription will be five dollars a year, payable always in advance; any person forwarding twenty dollars, can have five copies of the work forwarded as they may direct. Each number will contain about 264 large and closely printed pages as heretofore, illustrated when necessary with cuts and engravings, and published quarterly, on the first of January, April, July and October.

Subscribers who may be in arrears, are urged to forward the amount of their dues, that the new series may be continued to them, it being the intention of the publishers not to send to such persons as are tardy in their remittances. Such subscribers as wish to commence with the new series, will see the advantage of forwarding their names early, for but few will be printed over the number subscribed for.

LEA & BLANCHARD.

Philadelphia, August 1st, 1840.

THE
AMERICAN JOURNAL
OF THE
MEDICAL SCIENCES.

COLLABORATORS.

- ELISHA BARTLETT, M. D. *Professor of Pathological Anatomy in the Berkshire Medical Institution.*
- JACOB BIGELOW, M. D. *Professor of Materia Medica in Harvard University, Boston.*
- A. BRIGHAM, M. D. *of Hartford, Connecticut.*
- N. CHAPMAN, M. D. *Professor of the Institutes and Practice of Physic and Clinical Practice in the University of Pennsylvania.*
- B. H. COATES, M. D. *one of the Physicians to the Pennsylvania Hospital.*
- REYNELL COATES, M. D. *of Philadelphia.*
- D. FRANCIS CONDIE, M. D. *of Philadelphia.*
- WILLIAM P. DEWEES, M. D. *Late Professor of Midwifery in the University of Pennsylvania.*
- S. HENRY DICKSON, M. D. *Professor of the Institutes and Practice of Medicine in the Medical College of the State of South Carolina.*
- GOVERNEUR EMERSON, M. D. *of Philadelphia.*
- CHARLES EVANS, M. D. *Attending Physician to the Friends' Asylum, Frankford.*
- JOHN D. FISHER, M. D. *of Boston.*
- E. GEDDINGS, M. D. *Professor of Pathology and Medical Jurisprudence in the Medical College of the State of South Carolina.*
- WILLIAM GIBSON, M. D. *Professor of Surgery in the University of Pennsylvania.*
- R. E. GRIFFITH, M. D. *late Professor of Medicine in the University of Virginia.*
- THOMAS HARRIS, Surgeon U. S. Navy, and one of the Surgeons of the Pennsylvania Hospital.
- E. HALE, M. D. *Physician to the Massachusetts General Hospital.*
- GEORGE HAYWARD, M. D. *Professor of the Principles of Surgery and Clinical Surgery in Harvard University, Boston.*
- HUGH L. HODGE, M. D. *Prof. of Midwifery in the University of Penn.*
- T. S. KIRKBRIDE, M. D. *of Philadelphia.*
- E^W TOR—ISAAC HAYS, M. D., *one of the Surgeons to Wills' Hospital for the Blind and Lame, &c.*
- C. A. LEE, M. D. *of New York.*
- SAMUEL JACKSON, M. D. *Professor of the Institutes of Medicine in the University of Pennsylvania.*
- SAMUEL JACKSON, M. D. *Philadelphia.*
- WILLIAM E. HORNER, M. D. *Professor of Anatomy in the University of Pennsylvania.*
- VALENTINE MOTT, M. D. *Professor of Pathological and Operative Surgery in the College of Physicians and Surgeons, New York.*
- REUBEN D. MUSSEY, M. D. *Professor of Surgery in the Medical College of Ohio.*
- T. D. MUTTER, M. D. *Lecturer on Surgery.*
- G. W. NORRIS, M. D. *one of the Surgeons to the Pennsylvania Hospital.*
- R. M. PATTERSON, M. D. *Late Professor of Natural Philosophy in the University of Virginia.*
- C. W. PENNOCK, M. D. *one of the Physicians to the Philadelphia Hospital, Blockley.*
- R. R. PORTER, M. D. *Late Resident Physician to the Friends' Asylum, Frankford.*
- THOMAS SEWALL, M. D. *Professor of Anatomy and Physiology in the Columbian College, District of Columbia.*
- ASHBEL SMITH, M. D. *Ex-surgeon General of the Texan Army.*
- NATHAN R. SMITH, *Professor of the Practice of Medicine in Transylvania University.*
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TO READERS AND CORRESPONDENTS.

We invite attention to the advertisement of the Publishers, announcing a *New Series* of this work to commence with the next Number. Advantage will be taken of this event to make whatever improvements our experience or the wishes of our friends have suggested, and others will from time to time be introduced as the advancement of science, and changes in the condition of the profession may require them. Promises as to the conduct he will adopt are unnecessary from the editor of this Journal. He refers to the past as the best guarantee for the future. It is sufficient to say that the course he has hitherto pursued and which has gained for the Journal its high character and extensive circulation, and established its claim both at home and abroad as a *National Work*, will continue to be undeviatingly followed. Maintaining as our exclusive aim the great interests of the profession and the promotion of the holy cause of truth and science, this Journal will be solely devoted to the honour and advancement of professional reputation and usefulness unshackled by sectional, party or personal feelings.

The profession in every part of the union are deeply interested in the character and success of this work, and they are invited to record in its pages the results of their experience.

The following works have been received:—

Transactions of the Medical Society of the State of New York, vol. iv. (From the Society.)

Practical Observations on the Causes and Treatment of Curvatures of the Spine, with hygienic directions for the physical culture of youth as a means of preventing the disease; an etching and description of an apparatus for the correction of the deformity; and engravings illustrative of the cases. By SAMUEL HARE, Surgeon. London, 1838. (From the Author.)

A System of Practical Medicine comprised in a series of original dissertations. Arranged and Edited by ALEXANDER TWEEDIE, M.D., F.R.S., &c., &c. Rudiments of General Pathology, Inflammation, Fevers, and Diseases of the Skin. Philadelphia: Lea & Blanchard, 1840. (From the Publishers.)

An Essay on the Means of Improving Medical Education and Elevating Medical Character. By A. BOARDMAN, M. D. Philadelphia, 1840. (From the Author.)

The Salt Sulphur Springs, Monroe County, Virginia. By THOMAS D. MUTTER, M. D., &c. &c. &c. Philadelphia, 1840. (From the Author.)

An Introductory Lecture delivered at the opening of the Medical Department of the Columbian College, November 4, 1834. By JOHN FREDERICK MAY, M. D., Professor of Anatomy and Physiology. (From Dr. Sewall.)

Twenty-third Annual Report on the state of the Asylum for the relief of persons deprived of their Reason. Philadelphia, 1840. (From Dr. Pliny Earle.)

An Introductory Address before the Students and Trustees of the Vermont Academy of Medicine, delivered at the opening of that Institution. Castleton, March 11, 1840. By HORACE GREEN, A. M., M. D., of New York, President and Professor of Theory and Practice of Medicine. (From the Author.)

Annual Catalogue of the Officers, Students and Graduates of the Medical Institute at Louisville, for 1839-40.

Proceedings of the President and Fellows of the Connecticut Medical Society in Convention May 1840, with a list of the Members of the Society. Hartford, 1840. (From Dr. Welsh.)

An Introductory Lecture to a course on the Principles and Practice of Surgery, delivered in the Vermont Academy of Medicine, March 12, 1840. By JAMES BRYAN, M. D., Professor of Surgery, &c., &c. 1840. (From the Author.)

Catalogue of the Trustees, Faculty and Students of the Vermont Academy of Medicine for the session of March, 1840. (From the Same.)

A Catalogue of the Officers and Students of Jefferson Medical College of Philadelphia. Session, 1839-40. (From Prof. Huston.)

Instructions and Observations concerning the use of the Chlorides of Soda and Lime. By A. G. LABANAQUE. Translated by JACOB PORTER, Member of the Am. Antiq. Soc. &c. &c. Third edition. New Haven, 1840. (From the Translator.)

Treatise on the Physiological and Moral Management of Infancy. By ANDREW COMBE, M. D., &c. &c. &c., with notes and a supplementary chapter by JOHN BELL, M. D., &c. &c. Philadelphia, Carey & Hart, 1840. (From the Publishers.)

Medical and Physiological Commentaries. By MARTIN PAINE, M. D., A. M. In two Volumes. New York and London, 1840. (From the Author.)

The Maryland Medical and Surgical Journal. April, 1840. (In Exchange.)

Report of the Commissioners, appointed by the Governor of New Jersey, to ascertain the number of Lunatics and Idiots in the State. Submitted to the Legislature on the 26th February, 1840. Newark, 1840. (From Dr. L. Condict, Chairman of the Commissioners.)

A System of Medical Etiquette, Rules and Regulations, as adopted by the Medical Association of North-Western Kentucky. Maysville, 1839. (From the Association.)

The British and Foreign Medical Review, or Quarterly Journal of Practical Medicine and Surgery. April, 1840. (In Exchange.)

The Edinburgh Medical and Surgical Journal. April, 1840. (In Exchange.)

The Medico-Chirurgical Review and Journal of Practical Medicine. April 1840. (In Exchange.)

The London Medical Gazette. 1840. (In Exchange.)

The India Journal of Med. and Phys. Sciences. Jan. 1840. (In Exchange.)

Revue Médicale Française et Étrangère. Jan. and Feb. 1840. (In Exchange.)

Gazette Médicale de Paris, February and March, 1840. (In Exchange.)

Journal de Médecine et de Chirurgie Pratiques. February and March, 1840. (In Exchange.)

Journal des Connaissances Médico-Chirurgicales. February and March, 1840. (In Exchange.)

Journal des Connaissances Médicales Pratiques et de Pharmacologie. February and March, 1840. (In Exchange.)

La Lancette Française Gazette des Hôpitaux Civils et Militaires. January, February and March, 1840. (In Exchange.)

Journal de Pharmacie. January February, and March, 1840. (In Exchange.)

The American Journal of Pharmacy for April, 1840. (In Exchange.)

The Boston Medical and Surgical Journal for May, June and July, 1840. (In Exchange.)

The American Medical Library and Intelligencer for May and June, 1840. (In Exchange.)

The Medical Examiner for May and June, 1840. (In Exchange.)

The Select Medical Library, and Eclectic Journal of Medicine, for May, June and July, 1840. (In Exchange.)

The Western Journal of Medicine and Surgery. June, 1840. (In Exchange.)

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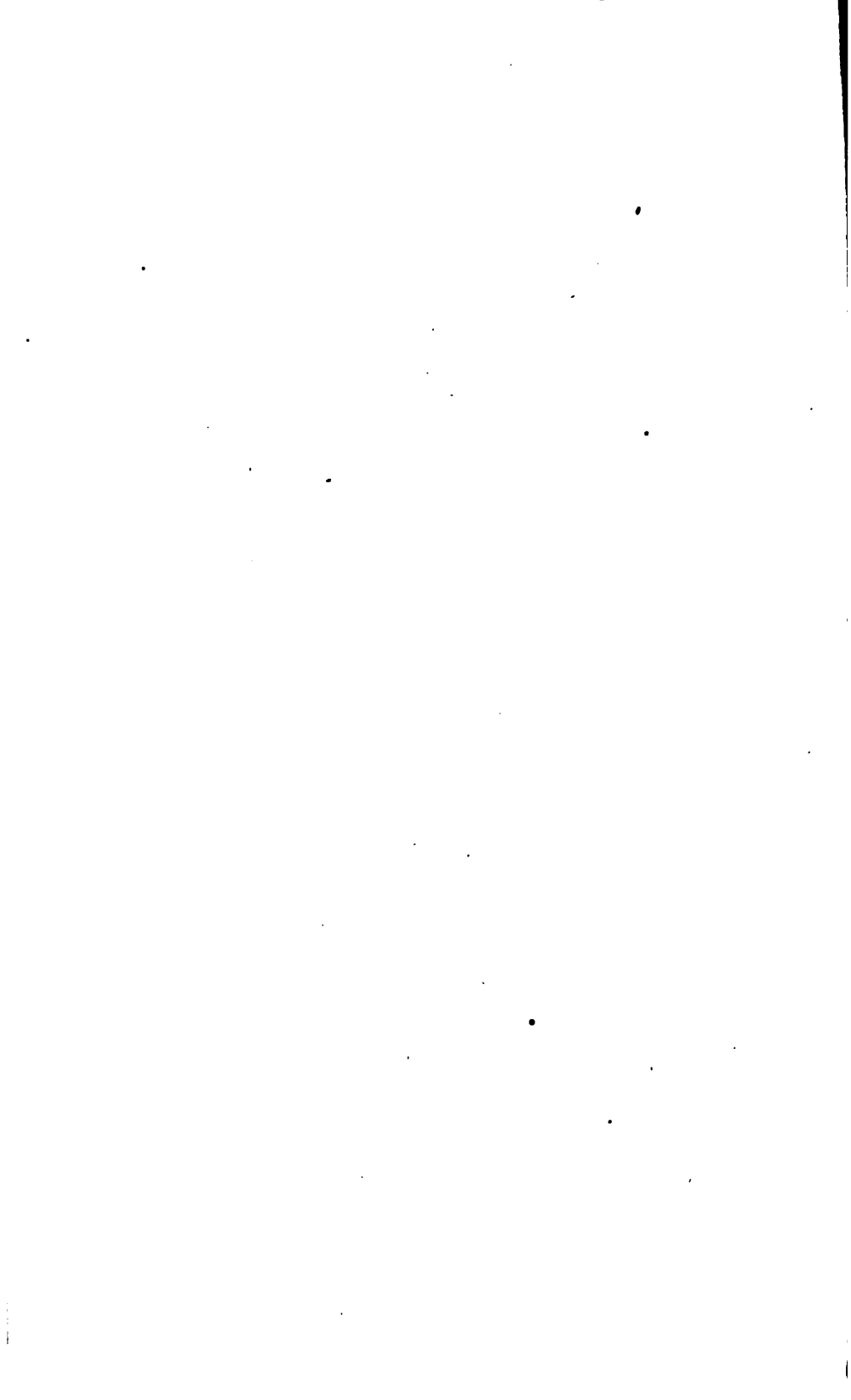
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THE
AMERICAN JOURNAL
OF THE
MEDICAL SCIENCES.

ARTICLE I. *Report of Cases treated in the Wills Hospital for the Blind and Lamæ during the months of October, November and December, 1839, with Observations.* By ISAAC HAYS, M. D., one of the Surgeons.

AMAUROSIS.—There were two cases of this disease, both convalescent, in the house when I took charge of it, and two were admitted during my term of service. One of the former and one of the latter were discharged cured; the other two remained, but somewhat improved. Three of these cases appear to us of sufficient interest to deserve some notice.

Case I. Partial Amaurosis—Inability to distinguish certain Colours.—Mary Bishop, ætat. 20, unmarried, segar maker, admitted February 9, 1839. The early history of this case has already been given* by my colleague, Dr. Fox; it will be sufficient, therefore, to recapitulate here merely its prominent features. The patient stated, that she had suffered, previous to admission into the hospital, two attacks of cerebral disease, one in the spring of 1837 the other in the winter of 1837–38. After recovery from the first attack, objects for a time appeared to her double. The second attack left her entirely blind, in which condition she continued for four months. After this her sight began to return, and at the period of her admission into the hospital she could read large print, as the heading of a newspaper. She was of a short, robust stature, full habit, very dark complexion, black hair and hazel irides, flushed face, colour of her cheeks at times almost of a purplish hue; catamenia suppressed. When she first came under my notice, which was

* See No. of this Journal for Nov. 1839, p. 16.

in May, 1839, she had been largely depleted and had taken remedies for the restoration of the menstrual discharge, under which treatment her sight had improved.

Whilst examining her at this time to ascertain the degree of vision she possessed, her reply to one of our questions led us to suspect that she was unable to distinguish colours. When asked whether she could see the figure in her dress, which was a calico one with red spots, she replied "Yes, I see the *brown spots*." Our attention thus directed to the subject, we soon ascertained that while she could distinguish forms, even of small size, with accuracy, her perception of colours was exceedingly imperfect. Repeated and careful investigations during this and on several subsequent occasions, satisfied us that the only colours which she knew with certainty were *yellow* and *blue*. Nearly all other colours she termed brown, or hesitated to name, designating, however, their shades or intensity of colour accurately. Thus a deep red she called a dark brown, a bright green a light brown, and a very pale pink a very light shade of brown.

We exhibited to her both by day and by candle light, a number of colours and have them now in our possession with the names she bestowed on them. With the exception of yellow and blue all the other colours were named with much hesitation, and some only after our insisting on her doing so, and she then manifestly named them by guess. We abstain from giving the details because we are satisfied they lead to no further useful results than to prove that she could not distinguish other colours than the two just mentioned. On one occasion our friend A. D. Bache, Esq., President of the Girard College for Orphans, visited the patient with us, and with a view of comparing her defect of vision with that of Mr. Dalton of Manchester, exhibited to her a number of fabrics of various colours, which he had received from that distinguished chemist, with their names, as they appeared to him, attached. Nothing new or worth recording was elicited by this experiment, unless the following circumstance, which for a moment greatly perplexed us, be considered as such; and it is so perhaps in one point of view, as showing how careful it is necessary to be in similar investigations to avoid being deceived. After manifesting her inability to distinguish correctly any except two colours, she surprised us by naming accurately the colour of some red silk, and which she had previously misnamed. A bunch of red cotton, however, shown her immediately afterwards, she termed brown. On inquiring why she termed the first red, she said that she had "discovered some days before that red produced sparkles before her eyes." Suspecting from this that she had been somehow led to connect glossiness with red, I called her attention to some bright, glossy *green* silk, which she promptly called red. When these same articles were shown her in such a light that she could not perceive their gloss, she miscalled them as usual. How the patient came to connect glossiness with a colour we could not discover, but as her defect was at this time

known through the house it is probable that some one had shown her a glossy red and given her its name.

The patient was not at all sensible, when we commenced the investigation of her case, that she laboured under any particular defect in distinguishing colours. She had noticed, she said, however, that grass and roses did not appear as they formerly did to her; the latter especially did not seem of their natural colour; but as her sight was imperfect she considered this as a natural consequence. She remembered, when questioned, that as her sight began to return, *the first colour she perceived was yellow*. This fact is of much interest, and she stated it with a degree of confidence, and mentioned some particulars which lead us to believe it to have been the case. She asserted most positively also that she had formerly been as well able to distinguish colours as any other person.

With a view to a revulsive action on the brain, and also to reestablish the catamenial flow, the patient was ordered pills of blue mass, rhubarb and aloes, every alternate night, in a dose to purge actively; mustard pediluvia at bed time, and a blister to the sacrum. Two days before her regular period I ordered, in addition, mustard cataplasms to be applied nightly to the inside of her thighs, and the same diluted with an equal part of flour to her mammae.

On the 29th of May her catamenia appeared and flowed copiously, but continued only for a single day. It was followed, however, by very marked improvement in vision. She stated to me at my visit on the 31st of May, with much satisfaction, that the roses now appeared to her of their natural colour, and that she could distinguish the difference between the colour of the rose and the leaves of the bush, which she had not previously been able to do. Roses of different colours being presented to her she named them all correctly; she could also distinguish quite small letters distinctly, but not more than three at one time—her field of vision seemed limited.

On the first of June Dr. Fox took charge of the hospital, and from this period until the commencement of my regular term of service in October following I saw the patient only at considerable intervals. During this time her sight improved and with it her ability to distinguish colours. By the middle of June she was able, she said, to see the eye of a needle and the end of a thread, but could not thread a needle from inability to see both at the same time. At this period Mr. Bache again visited Mary with me and exhibited to her the prismatic spectrum. She distinguished pretty accurately the yellow, blue, green and red. The orange she hesitated about and the violet she could not name. The colours were shown her together and separately: under the two circumstances she said they appeared somewhat different. Her retina on this, as on former occasions, seemed soon to become weakened by use. She would gaze at a colour for some time before naming it, and, when looking from one colour to another, the impression of the first

seemed to remain on the retina and for a time confuse her perception of the second. To avoid fatiguing the eye by too much exercise and to ensure the accuracy of our observations, it was necessary on all occasions to conduct the experiments slowly and at intervals, and with great care and caution.

On the 1st of October, when the patient again came under my care, her vision was in the state just described, but her catamenia were still suppressed and she was subject to occasional attacks of fulness of the head, during which her sight somewhat diminished. She also suffered during the early part of this month from attacks of dyspnoea, which came on every morning before dawn and continued for an hour or two.

October 18th. For the last three days she has suffered much from fulness of the head. Face flushed; pulse active. Ordered *v. s.* 3xvj. and to be purged with senna and salts. These remedies entirely relieved her head, and on the 22d of October she was free from all uneasiness, and could distinguish the different colours in a dress readily and also small letters. She was now ordered mustard cataplasms to inside of her thighs, to sacrum and mammae, and mustard pediluvium at bed time, with a view to a restoration of her catamenia.

25th. Fulness of head; has had a return of dyspnoea; costive; sight not so good. Ordered cups to sacrum; to be purged briskly; mustard pedikuvia. These relieved the head, but the period passed off without any catamenial flow.

30th. Feels quite well. Sight good; can read readily the small print of a newspaper. Distinguishes all the primitive colours readily and names most of the secondary ones as correctly as could be expected from one of her moderate intelligence, with the exception of violet: this last she seems always at a loss to name.

She would now have been discharged but for her earnest request to be allowed to remain in the hospital one month more, that another effort might be made for the restoration of her catamenia. It would be uninteresting to detail the treatment to which she was subjected during this month, and which failed in producing the desired effect.

November 30th. Discharged this day, with her vision restored, and in good health, the catamenia, however, still suppressed.

Remarks. The feature of most interest in this case is the inability to distinguish colours. This is, we believe, the first example hitherto recorded of this inability having resulted from disease, or been coexistent only with it. As a natural defect, the power of distinguishing forms being perfect, it is not rare. Several instances of this have come under our own observation, and not a few others have been mentioned by writers. Such of these last as have been recorded with sufficient details to furnish data for comparison, viewed in connection with the case we have recorded, lead to conclusions which it may not be uninteresting to notice.

1. As a natural defect, inability to distinguish colours may exist in different degrees.

2. In the worst degree, the individual is able merely to distinguish shades,—the perception of colour is entirely absent. Examples of this are afforded in the two Harris's, who could distinguish a striped riband from a plain one, but could not perceive the difference between any one colour and another, except as darker or lighter,* and in Dr. Elliottson's second case.†

3. In the next degree, the individual can distinguish only a single colour, and that colour is always yellow. Thus Dr. Butter states that Robert Tucker knew to a certainty *yellow* only;‡ and it appears that the boy whose case is recorded by Dr. Nicholl§ was in the same condition.|| Now it may be called to mind that Mary Bishop states when her sight improved the first colour she recognised was yellow.

It may be mentioned here, as connected with this subject, that we noticed a similar phenomenon in the case of a lady whom we attended for amaurosis in the winter of 1837–8. This patient, who was quite blind, began to recover her sight, and among the early evidences of improvement she mentioned, was her ability to distinguish shades of colour, as the stripes in a Venetian carpet; she could not perceive, however, a single colour. When further improvement took place she stated that she could recognise the *yellow* colour of a large looking-glass frame. A relapse then took place, from which she has not since recovered.

4. We may consider as the next degree of this defect where the individual can recognise two colours only; and these seem to be always *yellow* and *blue*. This is the most common grade of this defect. Examples of it are afforded in Scott,¶ Dalton and his brother,** in the case recorded by Dr. Nicholl in the *Med. Chirurg. Trans.* ix, 359; in that of J. B. related in the *Transactions of the Philosophical Society of Edinburgh*, vol. x, p. 253;

* Huddard, in *Philosophical Transactions* for 1777, p. 260 and 263.

† *Am. Journ.*, vol. xxiii, p. 446. The narrator states that this patient was deficient in discerning two primitive colours. It is manifest from the account, however, that this defect extended to all, and that the gentleman could merely distinguish shades. The rainbow, it is said, appeared to him "as a band of a lighter colour than the other part of the sky, but a little darker at one side than the other, and gradually shaded off between the two sides."

‡ *Transactions of the Phrenological Society*, p. 209.

§ *Medico-Chirurgical Transactions*, vol. vii, p. 472.

|| It would seem, indeed, that it was only the lighter yellows that this boy recognized accurately; he confounded the darker with red. This last colour he is said to name correctly, but the whole account proves that he could not distinguish this colour. Thus he called green, red; light red and pink, blue; paper stained with red raddish root he termed blue; green spectacles he called red glasses, &c.

¶ *Philosophical Trans.* for 1778, p. 612.

** *Memoirs of the Literary and Philosophical Society of Manchester*, vol. v, p. 28.

James Milne,* Mr. C.,† Mr. Troughton,‡ and Dr. Elliottson's first case,§ and Sir David Brewster's case.|| Mr. Scott, J. B.¶ and Mr. C. were imperfect in their recognition of blue; in the other cases the perception of yellow and blue seemed complete.

It is remarkable that, whilst all the individuals who belong to this class of cases are able to discern yellow and blue, they cannot distinguish these colours when presented in a state of mixture. Green they do not know—they seem blind to it. They cannot perceive any difference in colour between a stick of red sealing wax and a green table-cover; between the colour of the scarlet fruit of the Siberian crab and the green of its leaves, &c., &c.

So it was also with Mary Bishop: whilst able to detect yellow and blue she could not see the difference in colour between the red roses and their green leaves. It was not until her eye had become sensible to red that she could distinguish green.

5. It seems probable that individuals who are able to recognize *accurately* the three primitive colours, can also distinguish the secondary ones. To future observations must, however, be left the decision of this question. But persons whose perception of red is imperfect do not accurately discriminate the secondary colours.

As the imperfection in vision we have been noticing is a very curious one, it may be allowable here to call attention to some further facts connected with it.

It must be remarked that whilst those who labour under this defect naturally are unable to distinguish certain colours, though of the most vivid kind, they can discriminate any marked difference in *shades* or degrees of colour, and can see minute objects often with perfect distinctness. It occurs in persons whose point of vision is natural, as was the fact in most of the cases on record, and also in those who are far sighted, as Mr. Nicholl's fourth case and Mr. Colqhoun's second case; and in those who are near sighted, as in Mr. Dalton.

This defect appears often to be hereditary, or at least to prevail in certain families. Thus Harris had two brothers who were unable to distinguish colours, while two other brothers and sisters, as well as his parents, had not this defect.** Scott's father and one sister had the defect; his mother and ano-

* Transactions of the Phrenological Society, p. 222.

† Glasgow Medical Journal, vol. ii, p. 15. ‡ Brewster's Optics, Am. ed., p. 260.

§ Am. Journ. Med. Sci., vol. xxiii, p. 446. || Optics, Am. ed., p. 260.

¶ The editor of the American edition of Brewster's Optics, in a note, p. 323, says in relation to this case, "The Plymouth taylor, whose case is described by Mr. Harvey, seems not to have been entirely blind to red light, and to have been in a measure blind to blue." He has been, we believe, misled in the former inference, by the account of Mr. Harvey, who was himself deceived by the individual naming scarlet correctly on one or more occasions, by *guess*. A careful examination of Mr. Harvey's statement, will, we conceive, justify this belief. This disposition to *guess* the names of colours is generally manifested by persons who have the defect under consideration; and the errors to which this may lead, must be carefully guarded against.

** Philosophical Transactions, 1777.

ther sister were free from it; but his mother's brother had it. The former sister had two sons, both labouring under the defect. Scott had two children who were able to distinguish colours.* In Nicholl's first case the mother and father and his four sisters were free from this defect, but his mother's father had it. This last had two brothers and one sister; one brother had the defect, the others not.† In Dr. Nicholl's second case several of the family were similarly affected.‡ Mr. Dalton had a brother who laboured under the defect,§ and he mentions that he knows of a family of six sons and one daughter, in which four of the sons were unable to distinguish colours.|| 'Tucker's maternal grandfather had this defect; Wardrop states that several branches of a noble family in Great Britain have been remarkable for having it;¶ and we know of a family in this country similarly circumstanced.

We have often noticed that persons affected with cataract, who were unable to discern the *form* of objects, in consequence of the irregular refraction of some of the rays of light and the interception of others, could distinguish generally, very accurately, *colours*. Connecting this fact with the inability to perceive colours while forms could be discerned, as observed in Mary Bishop and some other cases of amaurosis, it occurred to us that we might derive from this a means of diagnosis between the two diseases. Subsequent investigations have not confirmed this idea. The subject may, however, be worthy of a more extensive examination than we have bestowed on it.

Several *theories* have been proposed to explain this defect of vision. Mr. Dalton thinks it probable that the red light is in these cases absorbed by the vitreous humour, which he supposes may have a blue colour; but this is a mere conjecture, which is not confirmed by the most minute examination of the eye, and does not even explain all the phenomena.

Dr. Young thinks it more simple to suppose absence or paralysis of those fibres of the retina which are calculated to perceive red; but there is no evidence of there existing in the retina fibres suited to the perception of the different colours, and this also does not embrace all the degrees of the defect.

Sir David Brewster, after analysing certain cases, says "In all the preceding cases there is one general fact that red light and colours in which it forms an ingredient, are not distinguishable by those who possess the peculiarity in question." Hence he at one time concluded that the eye is in these cases, insensible to colours at the one end of the spectrum, just as the ear of certain persons has been proved by Dr. Wollaston, to be insensible to sounds at one extremity of the scale of musical notes, while it is perfectly sensible to all other sounds. More recently he has offered the following

* Philosophical Transactions for 1778.

† Med. Chirurg. Trans., vol. vii, p. 472.

‡ Med. Chirurg. Trans., vol. ix, p. 361.

§ Mem. Lit. and Philos. Soc. Manchester, vol. v.

|| Ibid.

¶ Essays on the Morbid Anatomy of the Human Eye, vol. ii, p. 199.

explanation of the phenomena. "The eyes of such persons," he remarks, "are blind to *red* light; and when we abstract all the red rays from the spectrum constituted as already described,* there will be left two colours, *blue* and *yellow*, the only colours which are recognized by those who have this defect of vision. To such eyes, light is always seen in the red space; but this arises from the eye being sensible to the yellow and blue rays, which are mixed with the red light. Hence blue light will be seen in the place of the *violet*, and a greenish *yellow* will appear in the orange and red spaces, or which is the same thing, the spectrum will consist only of the *yellow* and *blue* spectra."

This theory embraces only one class of cases, and even in them it does not explain all the phenomena, as for instance, how it is that those who can perceive yellow and blue cannot distinguish those colours in a state of mixture; for of green they seem to have no perception.

Dr. W. Nicholl has proposed a theory† which is, however, so opposed to all the facts that it is unnecessary to occupy time in detailing it.

Mr. Wardrop thinks "it is not improbable that this defect of vision arises from a greater sensibility of the retina to the impressions of the blue and yellow—making rays, than to those of any of the others." "This may depend," he observes, "upon the refractive power of the humours, by which the rays of these two colours are more accurately united on the retina than rays of any other colour, and, consequently, the images formed there of objects reflecting these colours are more distinct than those formed of objects reflecting the other colours. When the colour of a body is compounded of several colours, the superior correctness of the image formed by the blue and yellow rays reflected from it, may cause the sensations which these colours excite to predominate over the sensations caused by the other colours, and thus may cause in the mind of the observer the perception of that compound colour to be different from the perception of the same colour to another person, whose eye forms images of external objects differently."‡

It is almost unnecessary to say that this is pure hypothesis and is even contradicted by some careful investigations presently to be noticed.

Sir John W. F. Herschell attributes this state of vision to a defect in the sensorium, by which it is rendered incapable of appreciating exactly those differences between rays on which their colour depends. This profound philosopher observes, "We have examined with some attention a very eminent optician, whose eyes (or rather eye, having lost the sight of one by accident) have this peculiarity, and have satisfied ourselves, contrary to received opinions, that all the prismatic rays have the power of exciting and affecting them with the sensation of light, and producing distinct vision, so that the defect arises from no insensibility of the retina to rays of any particular

* Optics, Am. ed., p. 69.

† Annals of Philosophy, Feb. 1822, p. 128.

‡ Essays on the Morbid Anatomy of the Human Eye, vol. ii, p. 200.

refrangibility, nor to any colouring matter in the humours of the eye preventing certain rays from reaching the retina, (as has been ingeniously supposed,) but from a defect in the sensorium by which it is rendered incapable of appreciating exactly those differences between rays on which their colour depends."*

This is essentially the phrenological doctrine. According to the phrenologists the eye only receives impressions, the power of judging of them resides in the sensorium; and the inability to distinguish colours does not result from any defect or imperfection of the eye, but upon that particular portion of the brain which they have named the "*organ of colour*."†

We trust that the preceding remarks will induce others to investigate this curious defect in vision under consideration. Opportunities, we believe, for it are of more frequent occurrence than is supposed, and if the opportunity be taken advantage of and the observations made accurately and with a proper method, a clue will no doubt be obtained to its explanation.

The prismatic spectrum, as it is always the same, and thus enables us to compare observations, should be made use of. The colours should be shown together and separately, and the individual's powers tested carefully. It is particularly desirable now to ascertain first what primitive colours the individual can distinguish, and which, if any, of the compound colours.

Case II. Partial Amaurosis from excessive use of the Eye—Cure. David Lang, ætat. 42, native of Scotland, weaver, unmarried, admitted October 2d, 1839. Habits very temperate, for the last four years has abstained from animal food; has worked hard during the day at his business, and devoted the evenings, until a late hour, to reading and writing. Sight commenced failing about eight weeks ago, since which it has been gradually growing worse. At present cannot see sufficiently well to weave or read ordinary sized type. Can distinguish, however, large letters, as the heading of a newspaper. Sees better at night than during the day. Person spare, rather short; face pale; irides light blue, active; no headache or sense of fulness of head; pulse natural. Slight grayness of pupil, but three images of a candle distinctly to be seen.

Ordered the following: R. Mass. hydrarg. gr. vi; Pulv. rhei, gr. viij; G. aloë, gr. i. M. Ft. pilul. No. iv. To be taken at bed time.

October 5th. Pills have purged him actively. Ordered strychnia, gr. ij; Acid acet. ʒj; Aq. puræ, ʒj. M. Ft. collyrium. A few drops on eye daily.

7th. Complained yesterday, of heaviness of top of head and of having slept badly the previous night. Sight he says rather worse. Tongue to-day

* Encyclopedia Metropolitana, art. Light, p. 434, § 507.

† Mary Bishop's case would seem to favour this theory, her affection having been the sequel to an attack of cerebral disease.

coated. To be purged actively every night with blue mass, and compound extract of colcynth. Collyrium to be discontinued.

9th. Complained yesterday of pains shooting from eye to back of head. In the evening was very unwell; had heaviness of head, great pain and disturbance of stomach, flatulence, &c. To-day feels rather better. To be freely cupped on back of head and neck. Continue pills.

11th. Feels comfortable. Sight improved. Can see the lines and words in a newspaper, but not the letters. Mustard pediluvium; cold water douche to head. Collyrium to be used to-morrow. Continue pills.

14th. Complained of some twitchings over left brow the morning after using the collyrium, also of heaviness of head. To-day feels quite well. Sight has improved much since the day before yesterday.

17th. Has occasionally had pain in his head. Sight improves; begins to distinguish features of persons at some distance. Continue treatment.

21st. Sight continues to improve. Bowels regular, sleeps well.

25th. Sight improves daily. Can see distant objects more distinctly; reads bourgeois type with facility. Continue treatment.

28th. Reads with facility. Sight almost as good as ever.

31st. Discharged this day quite well.

When he appeared before the committee for the month to be discharged, he read for them, with readiness, the smallest print of a newspaper and stated that he saw as well as ever. He was so delighted with his cure and grateful for it, that he insisted on presenting a small sum he possessed, to aid the funds of the institution.

Remarks. The slight evidences of congestion which existed in this case induced us to trust to revulsive purgatives for its removal, and to commence too early with the use of the strychnine. The mistake was, however, soon rectified. Cups to the nucha and back of head, cold water douche to the head, with mustard pediluvia and purgatives were then resorted to, and with immediate benefit. The strychnine was then recurred to and doubtless aided in the cure.

Case III. Imperfect Amaurosis of Right Eye from a blow—Partial recovery. Abraham Corbit, *etat.* 41, native of England; married; scissor grinder; admitted October 5th, 1839. Nine days ago, whilst splitting wood, a piece flew up and struck him on the right eye. He experienced little or no pain from the blow at the time, nor did he suffer from any subsequently. But three days after he found that the sight of the right eye began to fail, and by the seventh day after the accident, he was quite blind in it. Person spare, medium height; irides gray, pupil of right eye rather larger than that of left; in other respects appearance of this eye perfectly natural; health good. Has been blistered over right brow and purged. Can now tell when objects are placed before his right eye, but cannot dis-

tinguish their form. To be purged every alternate night, with *Mass. hydrarg. cum. extr. colocynth comp.* ʒʒ gr. iv. Henderson's collyrium to eye daily.

October 7th. Sight has improved; can distinguish the sashes of the windows; sees better at midday than in the evening, and near objects better than remote ones. Continue treatment.

9th. Sight continues to improve; can tell how many fingers are held before right eye, and can distinguish a silver pencil case.

11th. Sees distant objects better; distinguishes the window sash distinctly and a pencil case at the distance of two yards; continue treatment, with addition of mustard pediluvium at bed time.

14th. Can distinguish some of the large capitals in a primer.

16th. Complains of rheumatic pains in his lower limbs; *R. pulv. Doveri, gr. x,* and mustard pediluvium at bed time.

17th. Sight diminished. Has headache; rheumatic pains continue. Ordered *vin. rad. colchic. gutt. xx. ter. d.;* mustard pediluv. at bed time.

18th. Sight diminishing; rheumatic pains rather less severe; cups to spine; continue colchicum and pediluvium.

19th. Vision improved; rheumatic pains lessened; prevented sleeping by toothache; extract tooth;* continue treatment.

21st. Sight improving; can distinguish large letters; says objects "appear clearer and more distinct;" continue treatment.

23d. Sight better; rheumatic pains less; bowels costive; sleeps well. Cups to back; senna and salts.

27th. Sees distant objects better; has required purgatives occasionally to remove costiveness; rheumatic pains diminished. Continue treatment; apply galvanism, one pole of the instrument to right brow, the other to mastoid process of same side.

29th. Sight has improved he thinks since application of galvanism; sees objects at the end of the ward; rheumatic pains pretty severe.

31st. Sight about the same; rheumatism much better; sleeps well; bowels regular; galvanism was applied yesterday, but without any perceptible benefit; ordered moxa to brow.

November 3d. No improvement in vision; free from rheumatism; repeat moxa.

6th. No improvement in sight within the last week; sees, however, well enough, he thinks, to weave, which has been his occupation recently, and being desirous of finishing some work for an order, as he has a family to support, he requests to be discharged as an in patient, and to be placed on the out door list. His wishes were gratified, and he was furnished with a box

* This was neglected.

of purgative pills (blue mass and extr. colocynth comp.) and a bottle of Henderson's collyrium.

23d. The patient was again admitted into the house. During the interval he had several times received advice, but no change in the treatment worthy of note was made. He had been weaving and the premature use of the eye had impaired its power and he could not now see sufficiently well to continue his work. The treatment to which he was now subjected, consisted in the frequent use of galvanism, with the addition after a few days of strychnine conveyed into the system by the galvanic current; with mustard pediluvia and tincture of capsicum in frictions to the feet and legs, (the patient suffering much during the first three weeks in December from coldness of extremities,) and a due regulation of the bowels. By these means his sight improved. At night the patient stated that he could see considerably better than previously; though he maintained, contrary, however, to our impressions, that he saw no better by daylight. When my tour of duty expired he was still in the house, and I find by the register that he was discharged February 10, 1840, relieved.

Observations. Whether the amaurosis in the present instance was the result of concussion of the retina, or of injury of the supra orbital branch of the fifth pair cannot positively be determined, as it was impossible to learn from the patient whether the blow was directly on the eye or on the brow, the injury being so slight as not to have attracted much attention at the time, and the blow had left no mark.

The remedy which was most useful in this case was unquestionably galvanism. We have an evidence of this not only in the improvement which followed its application, but in the still more striking fact, that the *patient actually saw better whilst subjected to the galvanic action*. On the 6th of December, whilst the galvanic current was passing from the mastoid process to the superciliary ridge, I requested my intelligent friend, Dr. Jno. Neill, to hold before the patient some letters, and I asked him if he could distinguish them: he replied, "I see better than I could." The galvanic current was then interrupted by disconnecting one of the wires from the plates, and which was done without the patient's knowing our object. The letters being still held up, the patient in a minute or two requested the letters to be held nearer, then farther off, and finally he observed, "I do not see as well as I did just now." The connection being again made, the patient almost immediately and with apparent surprise exclaimed, "I see better again." The patient was not aware of our object in this experiment, and though of course he must have been sensible of a difference in the effect, still he did not know, as the poles were all the time applied to his head, that he was at times freed from the action of the apparatus.

In a case of a similar kind; that of Jos. M. Sutter, a carpenter, ætat. 43, admitted October 18, 1836, a complete cure was effected by galvanism.

This man trod upon a log, which tilted up and struck him over one eye. When admitted he had complete amaurosis of that eye. Various remedies were employed, among others moxas, with little benefit. I then resorted to galvanism, the very first application of which was productive of marked improvement, and its employment for an hour, two or three times a week, for five weeks, effected a complete cure. He was discharged January 3, 1837, well.*

In Sutter's case, and also for Corbit when he was the first time in the house, the galvanic apparatus employed was a Cruickshank's battery of twenty pairs of plates one and a half inches square. Subsequently for Corbit we used one with fifty pairs of plates three inches square. When this was in full activity it was too powerful for our purpose, and only half or two-thirds of the plates were usually employed. The connection was made by means of leaden wire conductors, to one end of each of which was soldered a slip of copper; and to the other a hemisphere of brass, the flat surface of which was filed into grooves crossing at right angles, so as to form a number of sharp points. Over these were tied thin discs of sponge, which were kept moist with a solution of common salt. When we desired to introduce the strychnine into the system we moistened the sponge attached to the negative pole, and sometimes both, with a solution of this substance. That the strychnine may readily be conveyed into the system by this means is shown by the experiments of M. Fabre-Palaprat, (see this Journal for February 1834, p. 561,) but also by the fact that usually much greater twitchings of the muscles were observed when the solution of this substance was employed, than when the sponge was wet merely with the solution of common salt. When the whole force of the battery was not wanted, instead of placing the slips in the extreme cells, they were placed in cells more or less remote, according to the power required; thus the force was easily regulated.

We are persuaded that properly employed, galvanism is a valuable and effective remedy for certain forms of amaurosis.

We tried electro-magnetism, in several cases in the hospital during our service in 1839, and also in private practice in a number of cases, but we are not sensible of its having been productive of the slightest benefit in a single instance. From this it would appear that for remedial purposes a regular and constant galvanic current, is more useful, than the violent shocks produced by interrupted currents, as induced by the electro-magnetic apparatus. A Daniell's battery would probably therefore be the best apparatus.

ACUTE CATARRHAL OPHTHALMIA.—But few cases of this presented, and of these our notes are imperfect, except with regard to one of them. We must restrict ourselves, therefore, to an account of this last.

* I am unable to give the minute details of this case, as the principal portion of my notes relating to it are mislaid.

Case IV. Acute Catarrhal Ophthalmia. Ann Carney, *stat.* 13; a native of England; admitted October 5th, 1889. She states that her right eye has been inflamed for three weeks; and that four days since the left one became affected. The only remedy she has employed was a dose of senna and rhubarb, with the application of cold water to her eyes.

When admitted she was in the following state:—*Right eye*—conjunctiva oculi injected, particularly at inner canthus; red vessels to be seen extending a short distance on margin of cornea. Palpebral conjunctiva of lower lid much injected; that of upper slightly so. Considerable lachrymation and photophobia in both eyes. *Left eye*—ocular conjunctiva, general injection, serpentine vessels forming superficial layer, large; beneath a layer of straight vessels running perpendicularly to the cornea. Palpebral conjunctiva, general injection producing intense redness. Cornea at upper margin thickened and nebulous.

Complexion rather dark; hair dark brown; irides pale gray with hazel spots; pulse full and active. Ordered *v. s.* ζ iv. R. Calomel gr. iv; Pulv. rhei, gr. viij. M. To be taken at bed time. R. Corros. sub. gr. i; Aq. puræ, ζ vi. To be used warm as a collyrium three or four times a day.

October 6th. Medicine has operated; collyrium causes but little smarting. Eyes improved, much less injected; less intolerance of light. Continue treatment.

7th. Eyes much less injected. *Right eye*—redness of palpebral conjunctiva almost disappeared; slight redness of lower portion of ocular conjunctiva. *Left eye*—series of vessels extending three or four lines on cornea. R. Tart. antim. gr. i; Calomel gr. vi; Pot. nit. \mathfrak{z} ij. M. Div. in chart. No. viij. One to be taken four times a day.

8th. Continues to improve; injection of eyes diminished—lids pale—no pain. Continue treatment.

10th. Yesterday a small styte appeared on upper lid of right eye, which was attended by some irritation and increase of injection of that eye. To-day there is a small pustule on margin of left cornea.

11th. Injection diminished; pustule disappearing. Continue powders and collyrium.

13th. Slight injection of the eyes every morning which disappears during the day. R. Ung. hyd. rub. to edges of tarsi, at bed time.

15th. Scarcely any injection of eyes this morning, lids smooth.

16th. Eyes appear quite well. Discharged cured.

Remarks. This case is worthy of notice, principally from the rapidity with which it yielded to antiphlogistic treatment; and for the opportunity it affords of inviting attention to the distinction between this form of Ophthalmia and the purulent conjunctivitis with chemosis, of which cases were related in our former report, (see this Journal, for August, 1889, p. 273,) and in which the nitrate of silver proved so efficacious. It is the want of this

discrimination in the use of this latter remedy which has led to its failure in the hands of some practitioners.

CHRONIC CONJUNCTIVITIS.—Several cases of this were under treatment, three of which appear to us worthy of notice.

Case V. Chronic Conjunctivitis, with ulcers and opacity of Cornea. Johannah Fortune, *stat.* 35, a native of Ireland, admitted October 8th, 1899. This woman had lost the sight of her right eye about a year since, by a violent attack of inflammation. Nine months ago, her left eye became inflamed and has continued to be so, with a few brief intermissions.

When admitted into Hospital, the cornea of her right eye, was disorganised and completely opaque; sclerotica pearly with some varicose vessels on conjunctiva. *Left eye*—ocular conjunctiva, injected, particularly at inner canthus, injection extending around greater part of margin of cornea; palpebral conjunctiva villous, injected, of a dark red or mahogany colour. Cornea, several tortuous varicose vessels running over it; three broad superficial ulcers occupying nearly the whole of its surface, and rendering it so opaque, that she could not see her way about the ward, but required to be led.

Her complexion was pallid and unhealthy; person rather spare, flesh soft and flabby; general health apparently feeble.

October 9th. Had great pain in her left eye last night; injection increased; photophobia. Thinks she took cold last evening in coming to the Hospital; says she is very sensitive to atmospheric changes, and that her eye always becomes worse when she is exposed to cold. Scarified left upper palpebra, which was much injected; it bled freely. Ordered mild vegetable and farinaceous diet.

10th. Free from pain last night, slept soundly, much relief afforded by scarification.

11th. Suffered much from pain last night at bed time; injection increased. Repeated the scarification, and ordered Pulv. ipecac. comp. gr. xxx; Calomel, gr. xij. Div. in chart. No. iij. One to be taken at bed time.

14th. Has taken a powder the three preceding nights, and slept well. Mouth to-day somewhat sore, eye better; upper palpebra considerably injected. Scarified this part; and ordered infusion of Ulm. fulv. for mouth.

15th. Great improvement; injection and opacity diminished, vision better; bowels costive; mouth very sore. Ordered senna and salts; R. Arg. nit. gr. ii; Aq. puræ, ʒi. Ft. collyrium. A few drops in left eye daily.

17th. Sleeps well; eye feels better, scarcely any photophobia; injection diminished; vision improved; some sensation of sand in the eye after use of collyrium; bowels regular; mouth extremely sore. Continue treatment; kresote wash to mouth.

27th. Has continued to improve during the past ten days. She has taken

two doses of senna and salts, during this period her left upper lid has been once scarified, and the solut. argent. nit. has been daily applied to eye. To-day her eye feels a great deal better, it is free from pain, very slightly injected, scarcely any photophobia remains; sleeps well; bowels open; mouth getting well; appetite poor. Ordered infusion of chimaphila umbellata, a wineglassful three times a day. Continue collyrium nit. arg.

30th. Improving; injection of ocular conjunctiva has disappeared; that of palpebral conjunctiva still continues, and the edges of the lids are somewhat tumefied; ulcers slowly diminishing; vision so much improved that she can now distinguish quite small letters. Ordered blister to back of neck; Ung. hydrarg. rub. to edges of tarsi every night, and solut. nit. arg. to eye daily. Senna and salts when costive.

November 10th. The improvement has continued under the above treatment to this date. The ulcers have gradually diminished, the sight improved, and the mouth has become quite well. To-day the lower half of the ball of the left eye is slightly red, and the right eye considerably injected. The solut. nit. argent. of increased strength (gr. iv. to ʒi.) was applied to left eye; and a fomentation of infusion of chamomile with opium to the right.

15th. Left eye much improved, number of red vessels on cornea diminished. Right eye has been improving, but to-day it is again very sore and red. Scarified upper lid of right eye. Applied solut. arg. nit. to left.

22d. Left eye free from pain and injection, ulcer of cornea healing. Right eye, very slight injection; upper palpebra a little thickened and villous towards outer canthus. Applied solid sulphate of copper to right upper lid; and solution of nitrate of silver to left eye.

27th. Lids smoother and less red; vision so much improved that *she can now thread the finest needle*. Scarified left upper lid. Continue solut. nit. argent.; and ung. hydrarg. rub.

December 1st. Opacity of left cornea has almost disappeared, lids smoother and paler. The solution of nitrate of silver was now used of the strength of six grains to the ounce of water. No irritation followed its application. The ung. hydr. rub. was applied nightly to the edges of the tarsi; the bowels were kept open by an occasional laxative, (magnesia alone or in combination with rhubarb,) and the lids were twice scarified. Under this treatment the improvement was progressive, and she was discharged cured, on the 21st of December. She might have left the hospital earlier, but as the weather was inclement and she had previous to her entrance always suffered from exposure to cold, she was retained in order to confirm the cure and secure her from a relapse.

Remarks. The mercurial salivation, developed unintentionally, its alterative influence only having been desired, contributed much, we think, to the steadiness with which convalescence proceeded in this case, and to the com-

plete cure effected. The solution of the nitrate of silver was mainly instrumental in inducing the cicatrization of the ulcers. There was no remedy employed, however, which was more strikingly beneficial than the scarifications. They were invariably followed by a marked diminution of the vascular injection, and of the uncomfortable feeling in the eye. The disfavour with which this measure is regarded by some practitioners has resulted from their improper employment of it. Early in our practice we frequently had recourse to it, and were so disappointed in its effects that for a long period we abandoned it. Dissatisfied with the progress of cases of chronic conjunctivitis with great vascular engorgement, we some years since again resorted to it, and with the best effects. We since have very often employed it, and nearly always with benefit. In acute inflammation it is not only less efficacious than other antiphlogistic means, but sometimes has appeared positively injurious. But in cases of chronic conjunctivitis, unattended by any activity of the pulse, and where the vessels of the conjunctiva palpebralis superioris are engorged, or this membrane thickened, with vascular cornea, &c., scarifications properly performed will greatly promote a cure. The incisions should be free, but not so deep as to wound the cartilage, as we have seen them made, and thus give rise to rough and dense cicatrices; and the bleeding should be promoted by sponging the part with warm water.

CASE VI.—Chronic Conjunctivitis—Opacity of Cornea—Ophthalmia Tarsi.—Mary Kelly, ætat. 21, admitted October 2d. Has been afflicted, she states, with "sore eyes" for the last 13 years; was engaged at a factory, but her sight has become so imperfect that she is unable to continue her work.

Some injection of ocular conjunctiva, and considerable injection of palpebral conjunctiva of both eyes; edges of tarsi red, thickened, and in the morning encrusted. Both corneæ nebulous, right most dense; complexion rather florid; face covered with pimples (acne). *Cups te nucha.* *R. Lac. sulph.; Crem. tart. ʒss. M.* One drachm every alternate night. Mustard pediluvium three times a week; vegetable diet.

4th. Injection of conjunctiva somewhat diminished; scarified lids. *R. Corros. sub. gr. ij.; Aq. puræ, ʒvj. M.* To be used warm as a collyrium three times a day. Continue other remedies.

7th. Eye felt better after the scarification, though the vessels soon filled again; the collyrium produced considerable smarting and increase of injection, and was discontinued after using it twice. To day the eyes are much less injected; pustules appearing on edges of tarsi; palpebral conjunctiva still injected. Scarified both upper lids. Continue laxatives and pediluvia.

9th. Lids felt better in the afternoon after they were scarified. Injection of the eyes continues to diminish; pustules disappearing from the left lids;

still numerous on the right. Unguent. hyd. rub. dilut. to edges of tarsi at bed time.

11th. Yesterday the eyes were better, but to-day they feel very sore, and the lower lids are more injected, as also the lower portion of the conjunctiva of the balls; lachrymation. An hordeolum appears to be forming on the left lower lid; tarsi encrusted; pulse active. Eight ounces of blood to be drawn by cups from the head and back of the neck. Continue other remedies.

13th. Eyes and lids much paler; edges of the tarsi less encrusted; sight improving. Solut. argenti nitratis, (gr. ij. to ʒj,) to be dropt on the eye daily. Ung. hyd. rub.; mustard pediluv. and cremor tart. with lac. sulph., to be continued.

15th. Injection of the eyes diminishing; sight with the left eye improving; sleeps well. Continue treatment.

21st. Eyes feel well this morning, and are free from pain or inflammation; nebula on the left cornea scarcely visible, that on the right diminishing. Continue treatment.

26th. Continued to improve until this morning. Eyes now feel a little sore, with some pain and redness in them. R. Mass. hyd. gr. vj; pulv; rhei, gr. viij. M. To be taken at bed time.

28th. Eyes feel well and are free from injection. Merely a slight mistiness perceptible on the left cornea, nebula of right cornea diminishing. Substitute liquor plumb. subacet. for solution of argent. nit., and pilule rhei cum aloë for cremor tart. and lac. sulph.; continue ung. hydrarg.

November 1st. Eyes continue free from pain or injection. Vision with the left eye perfect; with the right eye can read pica capitals; continue treatment.

10th. The opacity of the right cornea has diminished; yesterday the liquor plumb. subacet. caused considerable irritation, followed by photophobia, both of which have subsided this morning. Liqueur plumb. and pil. rhei to be discontinued, and the solution of nitrate of silver, two grains to the ounce, to be applied daily to the eyes, and a teaspoonful of cream of tartar and milk of sulphur to be given every alternate night; continue ung. hyd. rub.

Under this treatment, the redness of the lids entirely disappeared, the opacity of the right eye gradually diminished, and she was discharged cured, November 20th.

Case VII. Chronic Conjunctivitis, with opacity of both Corneæ.—Margaret Corbit, ætat. 7, admitted October 23d. This child states that she has been subject to inflammation of the eyes, is unable to say how long, but thinks for two or three years. She has light hair, fair complexion, and bears other marks of the lymphatic constitution. She has, at present, conjunctival inflammation of both eyes, and opacity of both corneæ. Lachry-

mation; slight intolerance. *Left eye*—conjunctiva oculi injected; most so at inner canthus; two sets of vessels distinguishable, one external, tortuous and large; another beneath, running perpendicular to cornea, straighter and smaller. *Cornea* entirely nebulous, so that outline of pupil cannot be distinguished; opacity irregular, most dense at lower part of cornea. Vision very imperfect; can tell the number of fingers held before her eye, and perceive objects passing before her, but cannot discern what they are. *Right eye*—conjunctiva oculi injected, but less so than that of right, and vessels smaller and less tortuous; palpebral conjunctiva injected; *cornea* nebulous; opacity more uniform but less dense than in left. Can distinguish objects with this eye. Ordered one of the following powders to be taken four times a-day: R. Calomel, gr. vj; Antim tart. gr. ss; Potass. nitrat. ℥ij. M. Div. in chart. No. vi.

28th. Marked improvement; injection of ocular conjunctiva gone, except at inner canthus of left eye; opacity in each cornea diminishing; upper portion of left pupil can now be distinctly seen; vision with this eye much more distinct; no intolerance. R. Argent. nitrat. gr. ij; Aq. puræ, ℥j. M. Ft. collyr. A few drops to be applied to eye daily. Continue powders.

November 1st. Eyes much improved; have been free from conjunctival injection for the last two days. Opacity of the left cornea diminished; colour of iris, (light blue,) distinguishable; pupil now visible through the whole upper half of the cornea, great improvement in vision. Opacity of the right eye also diminishing. Take a small teaspoonful of the following, every night; R. Lac. sulph.; Cremer tart. aa ℥ss. Ung. hyd. rub. to be applied to the edges of the tarsi every night. Continue Collyr. solut. arg. nit.

4th. The improvement has continued; nebulae of both cornea diminished. The pupil of *left eye* can now be distinguished through any part of cornea; sees quite plainly objects of large size. Continue treatment.

12th. Opacity of the cornea regularly diminishing. Discontinue powders of calomel and nitre,* also cremor tart. and sulphur. Give one of the following powders night and morning; R. Pulv. rhei; Test. Ost. pp. aa gr. v. Continue Ung. hyd. rub. and solut. nit. argent.

26th. Opacity of the cornea slowly diminishing. On the 20th the strength of the solution of nitrate of silver was increased to four grains to the ounce. The child can now thread a needle without difficulty. Discontinue solution nitrate of silver. R. Zinci sulph. gr. i; Aq. puræ, ℥j. Ft. collyrium to be applied to the eye daily. Continue powders, and ung. hyd. rub.

30th. Opacity diminishing more rapidly under the use of the solution of zinc. Iris is now visible through the lower half of the cornea.

The same treatment was continued through the whole month of Decem-

* It was intended that these should have been discontinued on the 1st; they were administered up to the present time, through a misunderstanding. It is not safe to persist in the use of these powders for any length of time as it involves the risk of salivation.

ber; the only change being the administration of the solution of hydriodate of potass, which was ordered at the commencement of this month and a few days afterwards, the liquor plumb. subacet. was substituted for the solution of the sulphate of zinc. The liq. plumb. subacet. was at first beneficial but towards the latter part of the month, the influence of the remedy seemed to have abated and it was abandoned, and the solution of zinc again resorted to. Under this treatment progressive improvement took place, and when my term of service expired, there was no inflammation in either eye; the right cornea was almost perfectly transparent, (a slight mistiness only could be perceived on very careful observation,) and the left cornea was entirely transparent at its upper third, and the remaining two-thirds were in parts transparent, in others the nebula was much less dense than originally. She was discharged cured. March 11th, 1840.

Remarks. This case is interesting both from the great improvement which took place, and the age of the patient. Affections of the kind are too often allowed to run on, either from the carelessness of parents, or a belief that they are incurable, until they are in time really rendered so. It is remarkable how great an amount of corneal opacity may be removed, in early life by the absorbents, when aided by an appropriate treatment. Had this child been a little longer neglected she would have become irremediably blind; and we conceive that in her case, the benevolent views of the founder of the Hospital have been fully realised.

CHRONIC CONJUNCTIVITIS WITH GRANULAR LIDS.—As usual, the proportional number of patients labouring under this affection was large. We shall notice a few of them in order to illustrate some of the forms which this troublesome and often disastrous complaint assumes.

Case VIII.—*Conjunctivitis with Granular Lids and Opacity of the Cornea.*—Bernard M'Crossin, ætat. 25, native of Ireland, labourer, admitted July 14th, 1839. The principal facts which we have been able to gather of the early history of this case, are, that the patient was first admitted into the Hospital on the 9th of March, with acute catarrhal conjunctivitis, accompanied with considerable swelling of the lids, and great photophobia. By the latter end of the month he was convalescent, but had a very severe relapse about the 1st of April. Convalescence was again established, but was followed by another relapse on the 1st of May, and this was repeated twice during the following month (1st and 14th June.) On the 13th of July the patient was discharged well. Four days afterwards he was readmitted with a relapse; and during this and the two succeeding months, the same disposition to aggravation of the disease, as soon as its violence was conquered, manifested itself. Three or four relapses occurred within this period; the last, on the 9th of September, was a severe one, and proved very intractable.

On the 1st of October, the patient came under my care, at which period his eyes were in the following condition. *Right eye*—ocular conjunctiva

injected, vessels distinct; palpebral conjunctiva thickened, that of the upper lid granulated; granulations rather pale, firm; cornea nebulous, a few red vessels running over the margin.

Left eye. Ocular conjunctiva similar to that of the right; palpebral conjunctiva thickened, that of the upper lid granulated; granulations firm, very red, larger than those of the other eye. Cornea, whole surface nebulous, of a dark color.

Excessive photophobia, vision being imperfect, most so in the left eye, pain in the head, pulse hard.

October 14th. Scarified left upper lid, conjunctiva cut like cartilage. Applied solid sulphate of copper to the right upper lid. Ordered ten ounces of blood to be drawn from back of the neck and temples by cups.

7th. Eyes much improved, injection and photophobia diminished; vision better. Applied solid sulphate of copper to both superior palpebræ.

9th. Yesterday was better. To-day there is increased photophobia, heat of the head and cephalalgia; ordered cups to back of the neck and temples.

11th. Better. Cupping relieved the head. Applied solid sulphate of copper to both upper lids, and introduced a seton into the back of the neck.

14th. Photophobia and injection diminishing; vision improving. Dropt in the eyes solution of nitrate of silver, one grain to the ounce.

16th. Yesterday there was increase of photophobia and injection, with cephalalgia. Cups were applied to the head, and though little blood was obtained, it afforded relief to the latter symptom; the others remain the same. Ordered vin. rad. colchic. gtt. xx, morning, noon and bed-time; to take with the last dose 25 drops of solution of sulphate of morphia.

18th. Photophobia and injection diminished. Vision with the left eye better than for a long time; can distinguish large letters; slept well. Applied sulphate of copper to upper palpebræ.

21st. Photophobia and injection continues to diminish; conjunctiva of upper palpebræ paler and smoother; no headache; seton discharging freely.

23d. Palpebral conjunctiva paler and smoother; some return of headache with active pulse; venesection, ℥xij , liquor. plumb. subacet. to eyes.

25th. Granulations of lids diminishing, few remaining at present, except near the edges of the tarsi; two ulcers on superior palpebral conjunctiva, which bleed freely on being touched; eyes free from pain; sight continues to improve. Applied sulphate of copper to the granulations.

28th. The eyes continued to improve until to-day. This morning his right eye became somewhat painful, and the lids are thicker, more granulated, and injected; pulse active; venesection ℥xij . Solid nitrate of silver to both upper lids.

30th. Eyes have continued painful ever since the application of nitrate of silver; lids tumefied; great photophobia; griping pain in the bowels; head feels light. R. Sulph. zinci, gr. i; Aq. puræ, ℥i . M. Ft. collyr. A few drops to the eye twice a day.

November 1st. Eyes easier; tumefaction and redness of the lids diminished; ulcer on left palpebral conjunctiva not so deep, does not bleed when touched; right upper palpebræ thick, and firm; did not sleep well last night. Bowels loose; pulæ rather feeble. Applied solid sulphate of copper to both upper lids. Ordered the following to be given three times a day: R. Sulph. quinin. gr. i; Hydrarg. c. creta, gr. ii. M. And the face to be held daily in a saturated solution of common salt in water, with the lids open.

4th. Continued improvement; lids less thickened, granulations diminishing, ulcers healing; sleeps pretty well. Continue powders and salt bath. Applied sulphate of copper to lids.

6th. Eyes feel and look better; photophobia diminished; sight improving daily; thinks he derives great benefit from the salt water; right upper palpebræ smooth, though still thickened. Applied liquor plumb. subacet. to eyes. Continue powders.

8th. Yesterday there was increased intolerance, and some pain in left eye; did not sleep well; bowels rather loose, for which last he was given an ounce of the spiced syrup of rhubarb. To-day there is less intolerance; his bowels are less deranged; slept well; sight improves. Applied solid sulphate of copper to both upper lids, and ordered a solution of the same, one grain to the ounce of water, as a collyrium.

11th. During the past two days the photophobia diminished; to-day there is an increase of it, and greater injection of the eyes; mouth quite sore from mercurial action. Discontinue powders. Applied solid sulphate of copper to both upper lids and ordered tonic infusion.

15th. Not so well; granulations increased. Applied solid nitrate of silver very lightly to both upper lids.

17th. Lids have been swollen, with some purulent discharge, since last application; intolerance continues. Ordered infusion of chamomile flowers with a small portion of opium dissolved in it, to be applied warm to the eyes. Vin. rad. colchic. Thirty drops three times a day.

18th. Eyes better, lids less swollen. Applied nitric acid, diluted with four parts of water, to conjunctiva of upper lids.

22d. Eyes much improved; less photophobia; palpebral conjunctiva smoother. Applied dilute nitric acid.

25th. Eyes were much better yesterday; seems to have taken cold last evening, and to-day they are worse. Left eye quite sore, palpebræ swollen; purulent discharge; photophobia; cephalalgia. Ordered six grains of tartarised antimony, to be taken in divided doses, to-morrow morning.

27th. Head is much relieved since operation of emetic, feels more comfortable than it has done for three months past. There is great photophobia, cornea more opaque; slight catarrh. Liquor plumb. subacet. to eyes.

29th. Eyes free from pain, but intolerant of light. Right eye much improved; left cornea very opaque and vascular. Feels very weak, no appetite,

pulse feeble; skin cool. Ordered one grain of sulphate of quinine, four times a day, with tonic infusion.

December 1st. Considerable diminution of intolerance, cornea clearing. Salt water to eyes.

4th. Better; eyes improving; bowels costive. *Liquor plumb. subacet.* Continue salt water. *R. Hydrarg. c. cret. gr. ii; Pulv. rhei, gr. iv.* three times a day. Discontinue quinine.

6th. Much better, free from headache or pain in eyes; bowels open; less injection and photophobia. Says his eyes always feel better and has less photophobia after use of salt water. Applied solut. nit. argent. gr. viij to 3i, to the eyes.

9th. Sight improved, can now open his lids wide; conjunctiva of upper palpebræ not yet quite free from granulations. Applied dilute nitric acid to granulations. Continue salt water.

13th. Nitric acid was applied to upper lids, on the 11th. Eyes have continued to improve; at present very little photophobia; sight improved. Left upper lid pale, with a few granulations; right injected. Applied diluted nitric acid to left upper lid, and scarified right.

16th. Granulations on left upper lid have been diminished by application of nitric acid. Right upper lid quite pale and tumefaction has disappeared since scarification. *Liquor plumb. subacet.* Continue salt water.

From this period the patient steadily convalesced. *Liquor plumb. subacet.* was applied every alternate day to his eyes, and after that period, every night, and the salt water once or twice a day.

30th. The redness and thickening and granulations of the conjunctiva has entirely gone; not the least photophobia; right cornea clear with the exception of a small speck below the centre; left cornea not perfectly clear and polished, but having something of the appearance of greenish glass. I advised the patient to remain in the house a month or six weeks to confirm his convalescence; but he considered himself as quite cured, and begged me to discharge him at the conclusion of my term of service. He was accordingly discharged.

Remarks.—This was an exceedingly stubborn case, and the favourable result was consequently the more satisfactory. To overcome the disease, it was necessary to resort to a variety of remedial measures, according to the very varying aspects which the case presented. To one of these remedies we wish to invite particular attention; not that we believe it contributed more largely to the cure than the others, but because its value is not generally known to the profession. We allude to the saturated solution of common salt applied as a bath to the eyes. To one of our patients who had employed this remedy with advantage, at the recommendation of some old woman, we are indebted for a knowledge of it. Having witnessed its efficacy in his case, and not being ashamed to learn from any one however humble, we

have since employed it in numerous cases, and with the most striking benefit. In some conditions of chronic granular ophthalmia, as where the eye is irritable, with injection of the conjunctiva of the ball, and lachrymation, I know of no remedy which affords such prompt and marked relief.

Case IX. Chronic Conjunctivitis—Granular Lids—Opacity of Cornea.

James Murphy, ætat. 43, native of Ireland, admitted September 7th. This man's eyes had been inflamed for nearly a year before his admission. The treatment to which he was subjected after his entrance, consisted principally in the application of solid sulphate of copper to his palpebral conjunctiva, blistering behind the ears, and purgatives, under which he improved. When he came under my care on the 1st of October, his condition was as follows: Skin pale—relaxed; hair light; irides pale blue; pulse rather feeble; stature short, thin; constitution apparently not robust; eyes feel very sore and uneasy; lachrymation; some photophobia; lids tumefied and puffy. *Right eye*—ocular conjunctiva slightly injected; palpebral conjunctiva very red, thickened, spongy, that of the upper lid granulated; granulations large, very vascular and flabby; cornea slightly nebulous at the centre, remaining portion clear. *Left eye*—similar to right, except that the granulations are not so large, and cornea was nebulous to a greater extent. I scarified the conjunctiva of both upper lids; the right bled very freely, the left less so. A sufficient quantity of blood was obtained to colour deeply a large basin of water.

October 5th. Eyes feel much better; granulations diminished. Ordered the following collyrium to be used warm. R. Corros. sub. gr. i. Aq. puræ, ʒvj.

7th. Eyes more injected; collyrium causes much irritation; bowels costive. Discontinue collyrium; scarified both upper lids; senna and salts.

9th. Left eye much improved, less injected; right eye also better. Applied solid nitrate of silver to both upper lids.

21st. Since last report, the lids have been once scarified; the solid nitrate of silver has been twice applied, and a few drops of a solution of this salt (one grain to the ounce) have been occasionally applied to the eye. To-day the eyes feel much easier; the thickening of the conjunctiva is diminishing; conjunctiva of the left upper lid is now pale and smooth, that of the right less red than it was, but still injected; bowels open, sleeps well. Applied solid sulphate of copper to both upper lids.

23d. Eyes free from uneasiness; intolerance diminished; lids less flabby. *Left eye*—conjunctiva of the upper lid almost free from granulations, except near the outer margin of the tarsus. *Right eye*—less improved than left; still granulations on the conjunctiva of upper lid; conjunctiva of both palpebræ injected and flabby. Applied solid sulphate of copper over the conjunctiva of both lids of the right eye, and to the margin of the upper lid of the left eye.

November 16th. The treatment since the preceding date, has consisted in the application to the left eye, every two or three days, of the solid sulphate of copper, and occasionally the nitrate of silver, when the former failed to keep down the granulations; and of the latter salt to the right eye. As a collyrium, he finds tepid water the most agreeable. Three days since he had a blister to the back of his neck. To-day his eyes are greatly improved, particularly the right one, the lids of which are now less puffy and vascular; cornea clearer; sight improved.

December 1st. Has had the solid nitrate of silver applied twice, and once the diluted nitric acid since last report. Has also used the solution of nitrate of silver (four grains to the ounce) as a collyrium; and has taken for a few days sulphate of quinine and hydrarg. c. creta, one grain of the former to one and a half of the latter, four times daily; and latterly the quinine with carbonate of iron. He has also been occasionally purged. His eyes now appear better, conjunctiva less flaccid and more polished: opacity diminishing; two red vessels still on the left cornea. Guthrie's ointment applied to the eye; continue quinine and carbonate of iron.

10th. Guthrie's ointment has been applied but once, as it did not produce as much improvement as I anticipated, and the solution of nitrate of silver (eight grains to the ounce) was substituted. A fomentation of chamomile tea, with opium, has also been used, and yesterday diluted nitric acid was applied to the lids. To-day the eyes are less injected; photophobia diminished; conjunctiva less watery and flabby; portions of the conjunctiva palpebralis perfectly natural in appearance.

20th. Diluted nitric acid was applied on the 11th and 13th inst., since which period the applications have been salt water and a few drops of liquor plumb. on the 16th and 18th, with ung. hyd. rub. to the tarsi at bed time. These applications seemed to be productive of much benefit, especially the former; but three days since, without any well ascertainable cause, his eyes became more injected and watery, though the lids remained smooth. His pulse was also rather fuller. The tonics were discontinued two days since; and to-day some blood was drawn from his head by cups, which was followed by considerable diminution of injection and lachrymation. The liquor plumb. subacet. was employed every two or three days; a blister was kept open on his arm; and he was occasionally purged. Under this treatment he improved so rapidly, that I hoped to be able to discharge him cured by the end of the month. Three days, however, before this period, both eyes became irritated and injected, and he complained of the sensation of a foreign body in his eye. I found that this was caused by some inverted eye lashes. These were immediately extracted.

31st. The removal yesterday of the hairs afforded prompt relief. The injection of the eyes has much decreased, and also the lachrymation; both upper palpebræ are entirely free from granulations, conjunctiva smooth

and pale. As there seemed to be a disposition in the cilias to grow irregularly, and the patient's eyes had been long affected, I feared a relapse might be induced from this cause, and he was transferred to the care of my successor. I learn that his right eye continued well, but that he subsequently had a slight relapse of inflammation in his left. Various remedies were employed, but none seemed to afford him so much relief as the salt water bath to the eyes, and the liquor plumb. subacet.

Case X. Chronic conjunctivitis—conjunctiva of superior palpebræ thickened, with numerous small ulcers—corneæ nebulous.—James Kinkle, *et al.* 32, a native of Ireland, admitted May 6th, 1839. When this patient entered the hospital, his right eye had been inflamed for a year, and his left for six months; the lids were thickened; conjunctiva of upper lids granular; both corneæ nebulous. Under an appropriate treatment, his eyes were improving when his general health began to fail. In August, he had frequent attacks of chills and fever, and he suffered much from derangement of stomach and headach. When he came under my care on the 1st of October, his health was restored and his eyes were improving. Such is the general history I have received of this case.

At the last mentioned date his eyes were in the following condition:—Conjunctiva of upper lids thickened, firm, pale-red, with numerous small pits or depressions, the bases of which are redder than other portions of conjunctiva, which gave this membrane a rough, or granular, and mottled appearance. These depressions, on subsequent minute examination, appeared to have been ulcers, some of which had healed, and others were still open. The conjunctiva oculi injected; the cornea of the right eye dull, resembling ground glass, with a few red vessels passing some distance on it. The left cornea with two nebulae.

During the first two weeks he was under my care, the treatment consisted principally in the application of the solid sulphate of copper to upper lids, every two or three days; with attention to diet and the regulation of his bowels. On the 14th of the month, I substituted the liquor plumb. subacet. to be applied every other day, which was continued for ten days. On the 25th of October, the solid sulphate of copper was again applied, and the following collyrium prescribed. *R. Zinci sulph. gr. i; Aq. puræ. M.* This last remedy seemed to exert a very happy influence in promoting the cicatrization of the ulcers and the absorption of the lymph on the cornea.

November 1st. Conjunctivæ palpebrarum superioris smoother and paler; ulcers not so deep; cornea clearing. With a view of hastening the cicatrization of the ulcers, their bases were touched this day with the solid sulphate of copper, and the collyrium of the sulphate of zinc was ordered to be continued. After the lapse of five or six days, collyrium seemed to be losing its effects, and it was replaced first by a solution of nitrate of silver,

(two to four grains to the ounce,) next by a solution of the sulphate of copper, (one grain to the ounce,) and finally, the sulphate of alumine, (four grains to the ounce.) The diet and regulation of the bowels were attended to: and as his complexion was pallid, and his appetite not very good, the carbonate of iron with extract of gentian, and afterwards the hydriodate of iron were administered.

Under this treatment he continued to improve, and on the 30th of the month he was discharged cured.

Remarks. The feature of most novelty and interest in this case, is the presence of numerous ulcers in the upper palpebral conjunctiva. We have occasionally seen two or three of them at a time, as in M'Crossin's case, but in such numbers as they existed in the present instance we have never before met with. Mr. Middlemore in his elaborate and valuable work on the diseases of the eye, states that "Minute abscesses in large numbers sometimes form in the subconjunctival cellular membrane, and they are observed to project the conjunctiva as a series of small convex white points. I have seen the mucous lining of the eye-lid completely covered with them, and yet there has been present scarcely any pain, and by the use of a little zinc, or some slightly stimulating lotion, they have all disappeared without leading to any breach of surface or any injurious effect whatever. The disease is by no means important, and it is on this account, I apprehend, that it is not mentioned by writers on ophthalmology." Whether or not the ulcers in our case originated in abscesses as above described, or were the result of the destruction of the granulations, I am unable to ascertain. They exhibited great indisposition to heal, and when the patient was discharged one or two had not yet cicatrized.

WOUNDS OF THE EYE. Few cases of these presented themselves during the present term. The following is the one of most interest.

Case XI. Wound of the Eye. George Haines, *ætat.* 13, admitted November 2d, 1889. This lad stated that in chopping brush, seven weeks since, a fragment had flown up and struck him in his left eye; considerable pain and inflammation followed. He had taken a dose of physic and been blistered by direction of a country practitioner, and his parents finding that he could not see with the eye, he was brought to town and placed under my care. At this time there was still considerable vascular injection of the eye, without much pain, however; there was a dense cicatrix towards the lower and inner margin of the cornea, and the remainder of this coat was so nebulous, that it could merely be perceived that the pupil was filled with an opaque whitish substance; whether lymph or the capsule or lens became opaque, it was impossible, however, to determine. The patient was ordered to be actively purged, and to be strictly dieted; an ointment composed of equal parts of extract of belladonna, and mercurial ointment to be

applied daily around the eye, and when the inflammation was subdued, a collyrium of sulphate of zinc (one grain to the ounce) was employed; under these means, the pupil became dilated, the dense mass which filled this opening diminished, and in two weeks the cornea had become sufficiently clear to enable us to see distinctly portions of lymph, some floating in the anterior, others in the posterior chamber, and adherent to the iris. The perfectly natural appearance of the iris indicated that this lymph was not the result of iritis; and the inference then was, that it consisted of portions of opaque capsule, and that the fragment of brush had penetrated the eye so as to wound this part. The catoptric examination made at this time, (November 16th,) confirmed this view. But a single image of a candle was reflected; the lens doubtless had been absorbed. The treatment was continued, with the omission of the purgatives, and on the 22d of November, the pupil was sufficiently free of lymph for the patient to read in a testament through a pin hole in a pill box. Without this aid he could not read, except large capital letters.

On the 21st of December he was discharged cured. At this period his pupil was perfectly clear, as was also the cornea, except a small cicatrix where this coat had been wounded. The perfect regular convexity of the cornea was somewhat impaired, however, by the manner in which the wound had united,* but not so much so as materially to affect the vision. The pupil is a little irregular, in consequence of the adhesion of the inner edge of the iris to the cornea at the cicatrix. With the aid of a cataract glass the boy could see pretty well, and with such assistance will no doubt in time have nearly perfect vision.

Remarks. Wounds of the capsule and crystalline lens, followed by opacity of these parts, and their removal subsequently by absorption, are probably of more frequent occurrence than is supposed. Two such cases† have come under our own observation within the past year, and a third has been communicated to us by Dr. Kerr.‡ Many cases of impairment of vision following wounds of the eye, and supposed to result from injury of the retina are doubtless of this character. This fact is of importance, as it leads to the adoption of a means by which the defect may be remedied. The patient is in the condition of one whose lens has been removed for relief from cataract; and he requires for distinct vision the same aid—a double convex lens, or what are termed cataract spectacles.

* Since the above account was in type, we have seen the patient; and find that this irregularity of the cornea has entirely disappeared. The cicatrix in the cornea has farther diminished, and his sight has much improved. With a magnifying glass he reads with facility.

† One case is recorded in the Number of this Journal for Aug., 1839, p. 513.

‡ See Number of this Journal for May, 1840, p. 245.

ART. II. A Recto-Vaginal Fistula—Cured. By J. REHA BARTON, M.D.

Miss R—, of Virginia, an unmarried lady, *ætat.* 22, most respectably connected in Philadelphia, shortly after her return from a visit to this city in June, 1835, experienced all the symptoms of an acute abscess in the region of the rectum and vagina. It formed, and broke on one side, and was lanced on the other. After a copious discharge of its contents one of the openings healed, whilst the other became fistulous, and remained so most obstinately for the period of about four years, resisting both general and local treatment, including injections, tents, setons, caustic, incisions and excisions. She came to Philadelphia for further treatment, and in March, 1839, was placed under my care.

The fistula was found commencing about three-fourths of an inch within the labium of the right side, thence passing by a very irregular course up the pelvis and inclining toward the rectum; into which cavity it finally opened, about three and a half or four inches from its inferior aperture in the vagina. Through this sinus there issued fluids in sufficient quantity to keep the genitals continually moist. Flatus also at times found its way through this channel.

The discovery of the real nature and the extent of this sinus, passing as it did from one to another important cavity, and establishing a communication between them, presented an embarrassing view of the case as to the mode of cure. It was now clear that the complaint must be treated with reference to its connection with the rectum, and upon the same principles that govern us in the cure of fistula in ano—for in fact it was virtually such a case modified by the unfortunate implication of the vagina.

It was nevertheless apparent that this sinus could not be included in a seton and ulcerated through, nor be laid open, as usually done in the common fistula in ano, without destroying the perineum and laying these two great cavities into one!—thereby causing a more unhappy state of the parts than had previously existed. The duty, therefore, of the surgeon was very clear—either to consign the patient to a continuance of her loathsome complaint or to adapt an operation to her peculiar case. The latter was successfully done, as follows:

A fine tent was inserted, for a few days, to dilate the sinus, and to render its course less tortuous. A seton was then introduced, with an eyed probe, into the sinus *per vaginam*; thence passed through its whole extent, until it had penetrated the rectum by the orifice into that cavity. It was then brought down and out *per anum*. The two ends were then loosely tied together merely for security against its slipping out. After a few days, the loop was opened, and the end of the seton passing out of the vagina was put

through the eye of a probe which was previously crooked at the other end. This probe was then inserted into the orifice in the vagina; thence about an inch and an half up the sinus, then its point directed toward the perineum, just exterior to the sphincter ani muscle. Here a small but somewhat deep incision was made, and the probe pushed through it; bringing along with it the end of the seton which had been doubled upon itself.

The seton now instead of passing out of the vagina, as at first, after coming down from the bowel, through only part of the sinus, descended through the new channel which I had made for it. The ends, lying almost side by side, were now tied together—thus forming a loop in which were included the parts between the outer surface of the sphincter ani muscle and the rectum. This seton or ligature was subsequently drawn and twisted tighter and tighter from time to time in order to cause its ulceration through the included parts, as we do in common fistula in ano, when operating by the ligature or wire. So soon as by these means, the new and direct channel was formed and had attained a larger size than that penetrating the vagina, the discharges from the rectum deserted that portion of the route which led into the vagina, and took the course of the seton. This was exactly the end which I designed to accomplish by my operation; believing that if I could establish a freer and more direct passage for the escape of the fluids of the rectum than that per vaginam, the sinus opening into this cavity would heal *sua sponte*, and become permanently obliterated. My opinions were confirmed—for long before the seton had made its way out by ulceration, the vaginal portion of the sinus had healed, and the integrity of this organ had been restored. I had now only to pursue the treatment of this case as I should have done, had it been a simple case of fistula in ano—viz., by continuing to tighten the ligature every day or two, until it finally came so nearly away that a slight clip by the scissors divided the insignificant intervening portion yet retaining it, when it was released. These parts healed up in a few days.

I had now the satisfaction of finding that my treatment of the patient was completely successful. She was entirely cured, and without disfigurement, of a recto-vaginal fistula, existing at an interesting period of her life, and under circumstances and embarrassments rarely to be met with in the same case.

It is now nearly one year since my patient was discharged cured, and recent accounts from her announce her to be in perfect health.

Philadelphia, June, 1840.

ART. III. *Case of Twins, simulating Superfetation, with Remarks.*
By ISAAC G. PORTER, M. D., of New London, Conn.

THE existence of superfetation in the human species has long been a contested question; and the cases, claiming to be such, which occasionally appear, indicate that some, at least, of the profession, are still unprepared for its rejection. Many, however, of these reputed instances of its occurrence, are self-contradictory, while others, which at first view seem to favour the doctrine, may, if thoroughly investigated, prove to be no more entitled to the character, than the case about to be detailed. Most respectable physiologists have maintained, that its existence, other than as it may be strictly coeval in time, or nearly so, is improbable, if not impossible, while others, perhaps no less eminent, relying more upon what is regarded as the evidence of experience, than the deductions of a physiological theory, have given to the doctrine the sanction of their names.

That the case, which is presently to appear, may be the better understood, the writer would refer to one, published by him in a former Number of this Journal, exhibiting the fact, that a foetus may cease to live at the fifth month, and yet remain until full term, undecomposed, in the uterus. Another example, illustrating the same point, has since occurred to the respected editor of this Journal, (Aug., 1837, p. 585.) On referring to the Number for Feb., 1836, will be found, the following concise history of the case, which occurred to the writer.

"July, 1835, Mrs. ——— proceeded to the fourth or fifth month of pregnancy, without experiencing any unusual circumstance. The signs of quickening, however, though anxiously expected, did not appear. With this exception, and the occurrence of severe dropsical symptoms, the other signs of pregnancy continued, undiminished, for another month. At this period, the size of the abdomen began gradually to diminish, and at the eighth and ninth months it was scarcely more prominent than ordinary. Still a foreign body could, at times, be perceived through the parietes of the abdomen and uterus. The general health remained perfectly good. At the close of the ordinary period of utero-gestation, without pain, or any uncommon efforts, the distended membranes were found slightly protruding from the vagina—pains, resembling cramp, succeeded, and subsequently, alarming hæmorrhage. Enveloped in the unbroken membranes, was a foetus apparently of five months, entirely free from any mark of decomposition. The placenta, which followed spontaneously, was in a morbid condition, being larger than ordinary and resembling in form and consistence, a sarcomatous tumour. At the usual period after delivery, milk was secreted in large quantity, and recovery was rapid and complete."

The following case, interesting in itself, and from its bearings on the sub-

ject of superfetation, has been kindly furnished for publication, by Dr. Perkins, a gentleman in extensive obstetrical practice.

New London, May 16th, 1840.

DEAR SIR:—Agreeably to your request, I herewith transmit a history of that interesting case, the origin of the peculiarities of which, has caused among us so much speculation.

On the morning of April 18th, 1840, Mrs. ——— was safely delivered of a stout male child, at the usual period of gestation, well, and weighing about nine pounds. The placenta was thrown off, by a slight uterine effort, in ten or fifteen minutes, perfectly entire, without any hæmorrhage. I left her in about half an hour and she expressed herself as more comfortable than after either of her previous labours. Passing the house three hours afterwards, I called to see her—found that she had been removed to her place in bed—every appearance natural—her strength good, yet complaining of what I considered *after-pains*, which were rather severe, but not unusual. Gave her an anodyne. Upon calling next morning, the nurse informed me that during the night a mass had come from the patient, which she had laid aside for me to examine. I found it to be a fetus, enveloped in the membranes, about four or five months old, entirely undecomposed, of a natural colour, healthy, and in form perfect for a fetus of that age, except the head, which was compressed. The funis was of the usual size and appearance, attached to a mass of hard, compact, membranous substance, white and as firm as the uterus, which it resembled in structure, appearance and shape; its length five inches and breadth four. On opening it it was found hollow, containing recent coagula. The section through each wall was full a quarter of an inch, but becoming thinner to the mouth of it, where it terminated in thin membranes, by which it was probably attached to the uterus. I should call this superfetation, if it be possible for that form of conception to exist, which it must either have been, or it must have been twins from the beginning, and continued so for the first four months, and then one of the bodies must have lost its character, as a growing fetus, and become like a substance of unnatural growth, yet attached to what had answered the purpose of a placenta—the uterus at the same time containing a natural, healthy child.

Yours, with respect,

N. S. PERKINS.

TO DR. I. G. PORTER.

Here, then, we have an instance proving, with the exception of the morbid placenta, as incontestably as it is possible for a single case, the existence of superfetation. A fetus of full term, and another of four months are delivered nearly at the same time, the latter "healthy in form, of a natural colour, and perfect for a fetus of that age." But we need no other proof

than the condition of what was once the placenta, to show that life could not have been supported by it. It was exhibited to the physicians of this place, and it is believed, that all are of the opinion, it could not, at any recent period, have performed the appropriate functions of a placenta. Both this, and the fœtus, exhibited marks of compression, such as would naturally be exerted by the parietes of the uterus, acting on dead matter.

How frequently, in alleged instances of superfœtation, has this condition of the placenta been overlooked—the attention being absorbed by the principal phenomenon?

Smellie, in his "Cases on Midwifery," vol. ii, p. 85, (1754,) under the head of Superfœtation, has the following case, communicated to him, in a letter, by Mr. Campbell. "A woman in this neighbourhood, was delivered of her first child, and the delivery followed by severe after pains, and five days afterwards, she miscarried of a fœtus, which could be no more than four or five months in growth. There was no sign of putrefaction about it, though it was still-born. There was no hair nor other sign of its being longer conceived. How to reconcile this with the present doctrine of conception will I believe be found difficult." Smellie replies to him as follows: "What you have writ me, seems to favour the notion of superfœtation, more than any thing I have met with in practice. But there are instances of extra-uterine fœtuses, which have laid whole years in the abdomen without being putrified."

The same author refers to two other cases of supposed superfœtation, which are evidently instances of twins, (and are so regarded by him,) one being retained until full term, and then delivered alive, the other having been expelled months previously. Dr. Samuel Jackson, late of Northumberland, has a case on record, showing the possibility of such an occurrence, and refers to others, witnessed or collected by Dr. Mease. Two of these, having the semblance of superfœtation, a sketch of them, as furnished by Dr. Jackson, will be given.

"In the transactions of the Royal Society of London, for 1818, Dr. Grenville refers to a case, related in one of the volumes of the college of physicians of London, entitled a case of "Superfœtation." A lady was delivered of a male child in November, 1807, and in three months afterwards, of another male child, 'completely formed.' The first died when nine days old—the second lived longer."

"I have now under my eye," says Dr. Grenville, *loco cit.*, "a recent preparation, where the complete ovum is seen, such as it was, when expelled at the seventh month of pregnancy, the lady being safely delivered of another child, alive, two months afterwards. Although the first fœtus was expelled at the seventh month, it was evidently the growth of a shorter period, and had remained in the uterus, dead, for three months."

If one fœtus may be expelled and the other retained until full term, much

more is it probable that both may remain, even if one be deprived of life, provided the membranes of each be separate and entire. How beautifully does each condition illustrate nature's conformity to established laws, and the care manifested in perpetuating the species. A dead fœtus, which is, in all respects, a foreign body, is enshrouded within the uterus. Why is not an action set up for its expulsion? Such would be the case were the membranes broken, for then the integrity of nature's operations would be infringed upon, and decomposition, and consequent irritation, would produce an action by which it must be expelled. But, the membranes remaining entire, nature proceeds in her work of perfecting the other fœtus, and at the end of forty weeks, expels her product, because, as Avicenna said, "such is the law of God." So with the living fœtus, which is retained after the delivery of its fellow twin. Why was it not then expelled, as it would have been at full time, or had it been a mass of coagula? Nature was aware that the accustomed limit of utero-gestation had not arrived; the living fœtus had its own waters and membranes, and consequently, created no unnatural stimulus to provoke abortion, and (will it be thought fanciful to assert?) there seemed an internal consciousness that it ought to be retained and nourished.

Another case very much in point, has just presented itself. "Mauriceau mentions his having seen a young woman, who had been delivered at the usual time, of twins, one of which was alive, and of the ordinary size, the other was dead, and seemed to be only of three or four months." Smellie, p. 89.

It is well known, that a late distinguished professor in the University of Pennsylvania, has an article in his "Essays on Midwifery," defending the doctrine of superfœtation. His views on the subject of impregnation, occurring, as he supposes, through the agency of a set of vessels, which convey the semen directly from the vagina to the ovaries, will, so far as received, obviate some of the standing objections to its existence. The case which he cites, as occurring in his practice, is very similar to those given above. He, however, asserts, that "the placenta was healthy and entire," and we have no wish to call in question the capacity, or correctness, of so intelligent, respectable, and accurate an observer. But he attempts "to establish, beyond a doubt, that it was a case of superfœtation, by the following considerations."

First. "The absence of hæmorrhage during the whole of gestation, which would not have been the case, had the placenta been any time detached, before the period of labour." This conclusion certainly appears rational, but let us apply the reasoning to the cases in hand. Are we to suppose that a morbid mass, with funis attached, which, in one case, is described as resembling a "sarcomatous tumour," and in another as a "hard compact, membranous substance, white, and as firm as the uterus," could have been attached, in manner and form, as a placenta, and have remained

thus up to the full period of utero-gestation? No hæmorrhage, however, occurred to either of these females during gestation.

Secondly. "The ovum had nothing in common with the full grown fœtus. On the contrary, each had its own membranes, waters and placenta." But the same author maintains in his "System of Midwifery," in the chapter on *Twins*, "each (twin) may have its own membranes, waters and placenta."

Thirdly. "The fresh and sound appearance of the ovum." But in the cases occurring to the editor of this Journal, to Dr. Perkins, and to the writer, there were no marks of decomposition; every appearance was healthy and natural, for ova of that age, although there was every reason to believe that life had long been extinct.

Fourthly. "Its having maintained its attachment to the uterus, after the birth of the other child." But the same length of time elapsed in the case, which suggested this article, the second fœtus not being expelled until fifteen hours after the living child. But had the placenta, in the case which occurred to the respected Professor, resembled the morbid mass so often alluded to, would it not require stronger faith to believe, that it could have been, in manner, attached, except, perhaps, through the medium of the membranes, than to suppose that it might have remained for a few hours, unattached, within the uterus?

How far the explanation, which this case affords, of an apparent instance of superfœtation, may be of service in removing the uncertainty and doubt, with which the doctrine has hitherto been regarded, future and extensive observation can alone decide. From an examination of numerous reputed instances, as reported, the following are the conclusions at which we have arrived.

"There is much reason to believe that superfœtation may, and does exist, where the female is subjected to a second impregnation, within a few hours after it has already taken place. This is shown by a few cases on record, where twins were born of different complexions, to correspond each with its paternity."

"If from all the reputed instances of its occurrence, there be excluded, such as are evidently cases of twins, one being retained after the other has been expelled; and also such as resemble the prominent case above, where both twins were delivered simultaneously, although life had been, in one of them, long extinct, it is believed that few, if any, clear and unequivocal examples will remain."

ART. IV. *Observations on the Iodo-hydrargyrate of Potassium.* By
CHARLES C. HILDRETH, M.D., of Zanesville, Ohio.

IN the Number of this Journal for February 1834, there is an article by Dr. Channing of New York, on a combination of iodine, mercury, and potassium, which will probably prove a valuable discovery in therapeutics, as it possesses the virtues of mercury and iodine in an eminent degree.

Its extended application to very many chronic and some acute diseases, as specified by Dr. C., would "startle the credulity of the cautious practitioner," were there not also well authenticated facts to prove its efficacy in a long catalogue of maladies.

The spirit of innovation and discovery is abroad in the land: good has no doubt resulted from it; yet it requires the test of careful experiment, to distinguish the good from the evil, to separate the wheat from the chaff. There is also too often manifested an effort to magnify the value of new discoveries by their authors, which is far from commendable. Remedies which are only efficacious in the cure of a few diseases, are stated with all the gravity of truth to cure a host of maladies; thus confidence is lost in medicines which are, in fact, extremely valuable in some few cases.

The preparations of iodine require great care in their exhibition, and in watching the effect of their gradually increasing doses.

Experience proves that all the combinations of iodine, (including the iodo-hydrarg.) are least liable to irritate the system when taken after eating. A much larger dose can be borne on a full stomach, than when fasting. The constitutional effect of the remedy, that is, its curative effect, does not seem at all obviated or prevented by repletion. Animal food is even prescribed by some authors as an adjuvant, and is said to promote its salutary operation. There is an unpleasant metallic taste remaining after the use of the iodo-hydrarg. which I have found best obviated, by taking the medicine in any of the bitter effusions, as of chamomile, gentian, &c.

When the iodo-hydrarg. has been pushed to excess, a train of symptoms is induced which calls for its suspension for a few days. Among the most important of these we may mention nausea and vomiting, giddiness and pain in the head, a peculiar heavy sensation about the eyelids and frontal region, slight pyalism, an eruption on the skin, first appearing on the face and breast, griping and purging. All these unpleasant effects are promptly relieved by suspending the medicine for a few days. Excessive action when once induced is very apt to recur on resuming the medicine, unless it is *very much diminished in quantity*.

In the paper referred to, several well marked cases of phthisis and chronic bronchitis are detailed, as having been cured by the remedy, and which, judging from the symptoms, would probably have died under any known form of treatment. This induced me to prescribe the remedy in

several cases of phthisis, occurring in my practice from time to time, and I am sorry to say that thus far, I have but little cause to congratulate myself on the result. In nearly every instance I have found it too irritating and stimulating, increasing the cough, fever, and difficulty of breathing, in some instances it has unloaded the lungs of vast quantities of pus and mucus, sometimes changed the character of the secretion from pus to mucus; but it has usually produced so much general distress to the patient, that I have been obliged to suspend it entirely. In these cases I have given it as directed by Dr. C. in small doses gradually increased, stopping its use when its effects were excessive, and resuming it again in diminished doses, but as yet it has not benefitted my consumptive patients. They have died under its use as speedily as under any other forms of treatment. My failure in diseases of the lungs referred to, may perhaps be owing to the want of the necessary skill and care, on my part, in its administration. I can only say, thus far it has disappointed me.

In *inflammations* of the lungs and other organs, I have not given it, nor shall I ever prescribe it, until I have lost all confidence in the lancet, tartar emetic, revulsives, &c. From what I have learned of the properties of the iodo-hydrarg. potass. from personal observation, I should think it *almost exclusively* adapted to diseases of a subacute or chronic character. Indeed Dr. Channing does not *particularly* recommend it in inflammatory cases, although he gives us a list of such diseases in which he has prescribed it with advantage.

But that the iodo-hydrarg. potass. is at all applicable to acute diseases I am very much inclined to doubt. That it is an active stimulant may be inferred from its effects in the hands of Dr. Channing, when given in collapse, by its producing pain in the head, excitement of the pulse, eruptive fever, griping and purging, &c., when given in excessive doses.

That a combination of two such Herculean remedies as mercury and iodine, must contain virtues of an active character will not be doubted, but that the same remedy should be equally applicable to the cure of diseases acute and chronic, and that its sanative influence should be felt throughout nearly the whole chain of maladies to which human nature is liable, would rather tend to "startle the credulity of the cautious practitioner," if it be not even a little of a Sangrado-like practice.

I shall advert in this communication to those cases only, to which I have found the remedy particularly applicable: in regard to its influence in other diseases for which I believe we have better remedies, I shall say nothing.

In pure functional diseases of the stomach, I have very frequently seen it exert a most salutary influence. Indeed so strong is my faith in its remedial powers in ordinary dyspepsia, that I have prescribed but little else for this disease for the last four or five years. By its strong alterative powers, it corrects the depraved secretions of the mucous membrane of the stomach and bowels, and of the chylopoietic viscera in general, and imparts

a tone and vigor to the digestive process which I have not found so readily induced by other remedies. Under its use long lost appetite is restored, the patient is relieved of flatulence, pyrosis, acidity, and constipation; the skin regains its natural color and feeling, there is an improvement in strength, and flesh, the depressed energies of the mind are restored, as a natural consequence of the restoration to health of the body. I do not recollect a case of pure functional disease of the stomach, in which I have given the iodo-hydrarg. potass. without benefitting my patient. It should be administered in some bitter infusion, always after eating, and in medium doses.

I will mention a case in point by way of illustration. Mr. G. R., ætat. 50, has for twenty years been a martyr to dyspepsia. When first attacked and for years afterwards he was in the habit of swallowing physic constantly—was cupped over the epigastrium, blistered, pustulated with tartar emetic, &c., but all to no permanent benefit. He has for years past abandoned all medicine, dieted strictly, and being actively engaged in business has managed to live tolerably comfortable with his disease. When suffering from attacks of an inflammatory or bilious character, he has constantly refused to take medicine but of the most mild and unirritating character, for fear of aggravating his dyspepsia. So great is his aversion to medicine that I had much difficulty in persuading him to take the iodo-hydrarg. potass. After a more severe attack than usual, he however consented to take it: it was prescribed in doses of eight drops, three times daily, in a bitter infusion and directly after eating. In a few days he found himself getting much better, but was not willing to attribute his improvement to the remedy. He continued it for three or four months, omitting it occasionally when he felt quite well, and resuming it again whenever he perceived the least indication of the return of the disease. He informs me to day, December 22d, 1838, that he has not felt so clear of dyspepsia for twenty years, and that the remedy I prescribed has been of more service than any thing he has ever taken for the same purpose.

Dyspepsia in females is often connected with irritation of the upper dorsal spine; this must of course be relieved by cups, leeches, blisters, or tartar emetic, before we can expect a cure. Should there be epigastric tenderness the same remedies will be also here required. I have not found it necessary to restrict the patient's diet so closely while using the iodo-hydrarg., as, under other forms of treatment; a bland farinaceous diet is of course to be preferred.

In *diseases of the liver* the remedy is no doubt inferior to other preparations of mercury. I have frequently seen it remove jaundice, but not more readily than the blue pill and other mercurials.

In *enlargements of the spleen*, it has a most decided effect; and from what little I have seen of its powers, I am inclined to put more confidence in it, than in any other form of iodine; several recent cases in children, the result of intermittents, I have seen reduced by it; but enlargements of this

organ in adults, of a *strictly chronic character*, I have often found incurable by this as well as other remedies. Indeed, it may be considered a question whether chronic cases which do not put the life of the patient in jeopardy by hæmorrhage, or induction of dropsical effusion, had not better be left to nature. I believe the effect of remedies in such cases is often worse than the disease.

In many of the derangements or diseases of function of the uterus, it has a most decided efficacy.

In *amenorrhœa* it has frequently restored the menstrual secretion after other remedies have failed. For this purpose it should be taken in doses of six or eight drops three times daily, during the early part of the month; it should be gradually increased to twelve or fourteen, or as large a dose as can be borne without producing excessive action; this should be continued up to the time of the expected menstrual effort. It should then be suspended entirely for a few days, and again resumed at the minimum dose. It probably operates by inducing a gradual restorative to health of the disordered digestive function, so evident in chlorosis, by relieving constipation, and perhaps determining to the pelvic viscera. Whatever may be its *modus operandi*, it certainly has strong emenagogue powers, and will no doubt prove a very valuable addition to this class of remedies.

Many cases in illustration of this fact might be drawn from my case book, did the limits of this paper permit; any one can however satisfy himself on this point, by a few careful trials of the remedy. Some four or five years since, I recollect prescribing the iodo-hydrarg. pot. for Miss E. R. This young lady was dyspeptic, her complexion was very sallow and spotted; she suffered very violent pain during each menstrual period, for which she was obliged to take large doses of morphia during the paroxysm. The prophylactics for dysmenorrhœa, of which she had taken many, had been of no service; as the paper of Dr. Channing did not ascribe any virtue to the medicine in dysmenorrhœa, I merely gave it to relieve her dyspepsia, and if possible, to restore the purity of her complexion, as she was grieving sadly about the loss of her personal charms. After using the medicine a few weeks in doses of six drops three times daily, she found her next monthly paroxysm much less violent in character. During the week preceding the next attack, the dose was increased to ten drops with the desired effect of entirely relieving the dysmenorrhœa. This happy result continued as long as she continued the medicine, but when she suspended it, the pain at the monthly period returned as violently as before. Her general health was however much improved, and the purity of her complexion restored as a natural consequence.

In several other cases of dysmenorrhœa in which I have given it, it has succeeded in preventing the pain when other prophylactics have failed to do so. In some cases it has effected permanent cures, but more generally it has in my hands merely succeeded in preventing the paroxysm while the

patient continued its use. The pathology of dysmenorrhœa we think a little obscure. In some cases there is a membranous secretion thrown off something similar to that ejected in croup; in others, there is a contraction of the os uteri, sometimes so great as scarcely to admit the finest silver probe. The rigidity of the body and cervix may give rise to pain during the menstrual effort in other cases. Notwithstanding the variety of causes tending to produce the disease, yet have we found the most unequivocal benefit from the iodo-hydrarg. pot. in nearly every case in which it has been prescribed, at least during the continuance of the remedy. The use of the bougie, as advised by Dr. M'Intosh in dysmenorrhœa arising from *contraction of the os uteri*, is probably the only scientific and sure remedy; and were it not for the innate aversion of the sex to all such manipulations, it might be made a much more extended and useful application.

In some few cases of *leucorrhœa*, in conjunction with other means, I have seen the iodo-hydrarg. produce a most salutary effect. It is probable, however, that for this disease we have better remedies. Its effects in two cases in which it was exhibited, were of so singular a character, that I cannot avoid mentioning them. In the spring of 1834 I prescribed the medicine referred to, for Mrs. J. P. C. This patient had suffered from fluor albus for many years, was feeble and dyspeptic. She was the mother of four children, the youngest of whom was then eight years old. She took eight or ten drops of the solution three times daily in some bitter infusion; astringent vaginal injections were also used at the same time. These means in a short time cured the leucorrhœa, and also restored the uterus and its appendages to such perfect health, that impregnation took place immediately; since this time she has been three times pregnant.

Mrs. W. G., the other case referred to, was treated for the same symptoms, in the same manner, and about the same time. This patient had borne two children, both of whom were dead, but had not been pregnant for four years; on recovering from her leucorrhœa, she began again to bear children, and has since borne two. These cases occurred so nearly together, that I could not fail to be surprised at the result of the treatment; indeed, so promptly had the remedy restored the uterus to health, that I was led to expect similar results in cases dependent on other causes; I was of course disappointed. Unfruitfulness in women depends on derangements of the sexual organization so opposite and various, that no remedy will ever be found applicable to all cases. Thus too rigid and too relaxed a state of the cervix uteri has been known to produce it; a slight contraction in the os uteri or Fallopian tubes, enlargements of ovaria, congestions of the uterus itself; derangements of function, as amenorrhœa, dysmenorrhœa, or menorrhagia, are all adduced as causes.

In the cases detailed, conception was probably induced, as the result of restoring the mucous membrane of the vagina and uterine cavity, to a perfectly healthy state, and perhaps also by reducing some chronic enlargement of the ovaries.

In the reduction of *glandular enlargements* of a scrofulous character, I have found the most happy effect from the following ointment. R. Dutiodid. hydrarg. grs. viij; Hydriod. potass. ℥ij; Axung. p. ℥i. M. This should be applied to tumours two or three times daily: should it prove too irritating to the skin a further addition of lard will be required. I have also been better pleased with the iodo-hydrarg. pot. in general scrofulous diseases than with any other combination of iodine. When continued any length of time, its effects should be watched, and its *excessive action* carefully guarded against, as the salutary action of the remedy very much depends upon this circumstance.

June 17th, 1836, was requested to visit Miss M. T., stat. 18. The submaxillary gland of the left side has been for two years much enlarged and indurated; several of the axillary glands are also enlarged and one of them having suppurated is now discharging a thin scrofulous fluid. She has amenorrhœa, many nervous symptoms, and a general chlorotic appearance. There is some tenderness on pressure of the upper dorsal and lumbar spine, for the relief of which an ointment of tartarized antimony was applied. A dose of two drops of the iodo-hydrarg. pot. was given three times daily in the usual manner. The ointment of the same according to the above prescription, was applied to the submaxillary and axillary glands—at the expiration of a week, suppuration had occurred in the submaxillary: it was lanced and discharged a considerable amount of healthy looking pus. Under the continued use of the ointment, the induration of the gland entirely subsided leaving no deformity—the axillary glands disappeared by resolution. Her menses returned after using the solution at the above dose in ten days. Her general health as a natural consequence was much improved.

Should the reader be surprised at the very extended range of disease to which we have found the remedy applicable, let him bring to mind the acknowledged influence of the minerals, mercury and iodine over the absorbent, secretory, and glandular systems. In this preparation we have these two powerful remedies, in a state of direct chemical combination (which has long been a desideratum in medicine.) From a remedy so constituted what should we justly expect but great activity, and extended influence. For a more specific account of the powers and properties of the iodo-hydrarg. potass. reference may be had to the very valuable communication of Dr. Channing in the Number of this Journal referred to. We will also beg leave to refer the reader to the book of nature, which is always open before him, and from which he can very readily learn its properties. In illustration of the influence of the remedy on the urinary apparatus, I will report one or two cases of dropsy.

Case I. General Dropsy. March 4th, 1836, was requested to visit Mrs. C. of West Zanesville, in consultation with Dr. Moore, her attending phy-

sician. The Dr. informs me she has for three months past been suffering from dropsical effusions into the cellular structure and peritoneum, probably the result of irritation induced by enlarged spleen or liver. The dropsy came on during the latter months of pregnancy. Parturition took place on the 2d of February, 1835; child lived but a few days after delivery; the dropsy increased rapidly, notwithstanding the liberal use of diuretics as directed by her physicians. We found the patient sitting in a chair, (the recumbent posture could not be borne,) and almost incapable of motion. The anasarca of the lower extremities was most complete, extending up to the pelvis: there was a deep slough over the tibia of the left limb, discharging freely the dropsical fluid—the skin was abraded in many places, blistered from extreme distension, and presented in spots a very unhealthy, livid aspect. The abdomen was distended to bursting, and gave her constant pain; the anasarca had also extended to upper extremities and face.

From the cough, dyspnoea, and stethoscopic signs; I was led also to suspect hydrothorax. Patient has no appetite; sits day after day in her arm-chair, and sleeps but an hour or two in the twenty-four, in the sitting posture. She passes about half a pint of high colored urine daily; in which lithic acid predominates. This case, we think, presented a very hopeless aspect, and this opinion, at the urgent request of the patient, we candidly communicated to her. With the consent of Dr. Moore, I prescribed the iodo-hydrarg. pot. in doses of ten drops three times daily in some vegetable diuretic infusion. Following the indication of nature, numerous punctures with a lancet were made into the cellular structure of the lower extremities, which gave exit to the accumulated fluid, and very much relieved the pain, distension, and danger of sloughing. The first prescription of ten drops, was in the course of a week gradually increased to fifteen—during this period there was a sensible increase of the urinary secretion, and it had in some measure lost its bright red color.

March 12th. There is a perceptible diminution of abdomen, and improvement of appetite.

15th. The dose of medicine is increased to twenty drops, there is a rapid absorption of fluid—six or eight liquid stools are passed daily from the action of the remedy on the bowels.

20th. Patient had a slight chill and fever. Much general distress followed the fever, relief from which she informs me was suddenly obtained by the passage of large quantities of water from the bladder. From this time the absorption of the effused fluids was *very rapid*, and the patient acquired considerable use of her lower extremities.

25th. Medicine increased to twenty-five drops, fluid nearly gone from abdomen, and cellular structure; applied tight bandage to abdomen; patient can lie down with ease; appetite good; strength increasing; seems confident of ultimate recovery.

April 1st. There is an eruption on the skin from the excessive action of

the medicine; too much griping and purging; suspend the medicine for four or five days; applied roller to lower extremities.

5th. Resume the medicine in doses of five drops, to be gradually increased; patient seems decidedly convalescent.

20th. Much pleased to find no indication of dropsical effusion about the abdomen or extremities. She looks much emaciated, but says she is daily gaining strength; yesterday took a long walk about town; her kidneys still appear too active; directed a chalybeate preparation to sustain her strength, also some of the vegetable bitters in decoction.

Remarks. This patient got quite well, and remained so for six months. Being in the humbler walks of life, and obliged to labour hard for the support of herself and family, she contracted a bad cough from exposure to wet and cold; inflammation of the lungs supervened, which was soon followed by return of her dropsy. The medicine was again exhibited, but seemed to have lost its effect; other remedies were given but to no purpose. She was twice tapped to give her temporary relief, and finally died about a year after she first came under my treatment.

I must confess myself much disappointed at the result of this case. I had flattered myself with the idea that a permanent cure had been effected. I report the case to illustrate the prompt action of the remedy on the urinary organs and absorbent system. I do not recollect to have seen larger quantities of water absorbed in a given time, than was effected under the use of the remedy.

Case II. Ascites. First saw Mrs. Bailey in April, 1836, when visiting her mother in the country, about three miles from Zanesville. Although her abdomen is of immense dimensions, Mrs. B. appears quite active, takes a great deal of exercise, and thus sustains her strength. The history she gave of her case is as follows:—After the birth of her first and only child in 1831 she “caught cold” her lochia was suppressed and in a few weeks dropsical effusions took place in the peritoneum. By the judicious prescription of her physician this was readily reduced. She remained free from dropsy for several years, but suffered much from menorrhagia every three weeks. This profuse discharge of blood very much debilitated her, and perhaps proved an exciting cause of dropsy. In 1835 her disease returned, and although she has taken remedies during the past year from several physicians, she perceived no improvement in her case. She suffers very little from her dropsy, much less than any case I have ever seen where the effusion was so extensive. She has, however, some difficulty of breathing when lying down at night. Being very weary of her present dimensions, she requested me to prescribe for her. I gave her the iodo-hydrarg. potass. in doses of ten drops three times daily. This was increased in the course of three weeks to twenty drops. It had the desired effect of increasing the action of the kidneys. She frequently passed nearly a gallon of urine daily—the abdominal swelling was reduced very rapidly but was never entirely removed.

She took the remedy for about two months, occasionally omitting it when its effects were excessive, and resuming it again in diminished doses. As she resided several miles from Zanesville, I could not devote as much attention to her case as would have been desirable—her husband at one time informed me he thought she was nearly well, so rapidly had the swelling diminished. After using the medicines for two months the patient for some cause or other, suspended it entirely. In a few weeks her disease returned with increased violence, there was now extreme distension of the abdomen, cough and great oppression about the chest, particularly in lying down. So great was her distress that I was summoned to perform the operation of paracentesis abdominis at her own urgent request. June 2d, 1836, with a common seton lancet and female catheter (which by the way I much prefer to that blunt and barbarous instrument the trocar) I drew off six gallons by measurement of a reddish limpid inodorous serum. The patient was immediately relieved of all her urgent symptoms; during the flow of water she called for food and drink and eat more heartily than she had done for weeks previously—A bandage and compress were applied to the abdomen. She now resumed her medicine, which again increased the action of the kidneys but did not prevent the return of the dropsy.

July 1st, the patient has occasional chills, also hectic fever and night sweats; she is losing flesh and strength; suspending the iodo-hydrarg., the patient took other diuretics as calomel and squill, digitalis, cremor tartar and jalap; but all to no purpose, the dropsical effusion continued to increase.

25th, I again tapped the patient; about five gallons of fluid were drawn off but very different in character from the first; it was very offensive in smell, of a dirty brown color and evidently purulent. My patient's health was by this time much impaired, she was much emaciated, could not sit up, the hectic fever and night sweats still continued, in fine she was reduced to the verge of the grave, to which I supposed her fast hastening.

At my last visit, July, 25th, I merely prescribed some anodyne remedies thinking her situation entirely hopeless, and requested the husband to summon me should any thing unusual occur, or tapping be again required.

I heard no more of my patient, and supposed her quietly reposing under the sod of the valley. I must confess I felt some compunctious visitings of conscience about the result of this case. I had found my patient a few months previous in the enjoyment of tolerable health, and actively engaged in household duties, and from her appearance there was a strong probability of her remaining in the same state for a long time to come, if her case had been left to nature. Being but a young practitioner, and not so familiar with the "grim monster" as many of my elder brethren, (who will no doubt admit they have sent him many a patient *secundum artem*.) these reflections were any thing but agreeable.

About three months after my last visit I met the husband of my patient

in town. My surprise may be imagined when he informed me his wife was *nearly well*, and was going about the house engaged as usual in domestic affairs. The history he gave of her case was this. After the last operation, the purulent secretion again accumulated in the abdomen, at the expiration of six weeks the distension being as great as ever, *ulceration occurred at the navel*, and the fœtid pus again found exit. The discharge was now so exceedingly offensive that no one could remain with her in the house, during its flow—About a quart of this fluid was discharged daily, for at least two weeks; it then began to diminish in quantity. She wore a compress and bandage to prevent its constant flow, which was removed at stated intervals. The orifice at the navel remained open during the latter part of the summer and fall of 1836; if the fistulous opening became obstructed at any time for a day or two, she was thrown into fever by the suppression of the discharge.

December 8th, 1836. Saw my patient in Zanesville. In walking the body is inclined forward; she cannot stand erect on account of the pain felt in the abdomen, probably from adhesions between the coats of the peritoneum. There are now two small orifices at the navel which evince no disposition to close; they give exit to about a tablespoonful daily of white inodorous pus. She still wears her bandage, and is very careful to keep the orifices open; discharge gradually diminishing.

January 1st, 1839. Met the husband to day, who informs me that Mrs. B. is perfectly well in all respects; has gained strength and flesh; can now stand erect without inconvenience.

April 20th, 1840. Mrs. B. continues in perfect health.

Remarks.—It would appear from this case that the operation of paracentesis abdominis when performed by nature is attended with far better results than when done by the surgeon. She also selects a different place for it, viz: the umbilicus, instead of the linea alba. And why, let me ask, should not the navel be always selected for this operation? The integuments and muscles at this spot are always the thinnest; and when there is much distension of the abdomen, there is always a natural *pointing* at this place, as if to indicate the spot for puncture. The natural gravitation of the fluid could be easily corrected by position or the use of the bandage; the danger of wounding the bladder, epigastric actions would be diminished, the pain to the patient would be lessened. I have myself performed the operation at the umbilicus, and have been pleased with the result.

It will be recollected that the fluid drawn off at the first operation, was of a pale reddish color, evidently serous, and without offensive smell; at the second tapping it had assumed the character of thin pus; which purulent character afterward became still more evident. Upon what principle can this sudden change be accounted for. In examining the abdomen after the first tapping there was no tumour of the ovaries, liver, or other abdominal organ, which by suppurating and bursting into the peritoneum, could thus

diffuse pus through its serous contents. We certainly may suppose the peritoneum itself to have poured out their purulent matter from its surface (as it is one of the acknowledged morbid products of all serous structures) but why, or wherefore, I must leave to better pathologists than myself. In fine, the case is an apt illustration of the remark, (which I think should be the motto of the disciples of Hahnemann,) that the "practice of physic is the art of amusing the patients, while nature cures the disease."

ART. V. *Observations on the Pathology and Treatment of Intermittent Fever.* By J. F. PEEBLES, M. D., of Petersburg, Va.

It has been long known, that intermittent fever occurs only in those districts of country, where the materials exist for the generation of its peculiar cause, and when the individual affected has been exposed for a sufficient length of time to the action of this poison, to have that particular condition of the system induced, for it to take on this singular diseased action. How this cause acts, and through what channel it passes, and what is the particular condition of the system it induces to originate this fever, has never been positively determined. Reasoning however from its primary phenomena, and from the order and regular succession in the chain of diseased action, we are induced to hazard an opinion, that the cause of intermittent fever, acts first upon the skin and the nervous expansions ramifying throughout its tissue, producing there, a morbid impression, which is transferred to the brain and spinal marrow, where it continues its mischief in a manner as we shall hereafter show, which produces the paroxysm.

Wherever, however, malaria may primarily attack the system, it is quite certain its first apparent effect is manifested in the skin. The earliest symptoms of intermittent fever come on so gradually and imperceptibly, that the practitioner is rarely able to observe them, unless, as it has been frequently my case, he witnesses them in his own person. In an attack of this fever, many hours before the patient is aware of actual indisposition, the insensible perspiration of the skin is dried up, and the capillary vessels throughout its whole tissue contract, suspend their circulation, and force the blood into the larger interior vessels, leaving the dermoid surface whitened and contracted. This diseased action in the skin is the first link in the chain of the disease, and is soon followed by the second in which the brain and spinal marrow suffers.

The first evidence which the latter organs give of their being involved in the disorder, is manifested in the lassitude complained of by the sufferer and the disposition to yawn, accompanied by an aching pain over the region of the loins and frequently dull headache. Whatever may be the nature of the dis-

order these symptoms indicate in the brain and spinal marrow, it is certain the whole nervous system speedily loses that control it is known to possess over the circulating apparatus, and the heart and arteries, left without its salutary guidance, quickly partake of that diseased action going on in the system, marked by a suspension of the usual vigour in the functions, and the consequence is, as the heart loses its power to send the blood throughout the whole frame, and to maintain an equilibrium in the circulation, that fluid gradually collects in the viscera of the abdomen and fills up the larger internal vessels, more and more clogging the heart's action, as the congestion increases, until a perfect internal congestion is induced which makes and marks the cold fit or stage. This condition of the circulatory system, indicates the supervention of another link in this continuous chain of diseased action, and the symptoms that first manifest it to the patient, are a frequent disposition to sigh to relieve the congestion of the pulmonary vessels, and a short dry cough; but it is made known to the physician at an earlier period by the feeble and small pulse. As these symptoms continue to grow worse, the patient feels a sensation of chilliness creeping over him at intervals, which gradually becomes shortened, and the sensation of cold more disagreeable.

If it has not come on before this period, it is always attended by thirst and an eager desire for the coldest drinks, and now the chain of diseased action is complete, the stomach and its numerous retinue of dependent and associate functions, being also complicated. The sensation of thirst as the disease progresses, becomes extremely distressing, and the stomach becomes so irritable, as to relieve itself often by vomiting, frequently of bilious matter which the disordered secretion of the liver has filled it with. These phenomena proclaim the cold stage of intermittent fever, and its acme is characterized by the following symptoms. A feeling of intense cold which none of the ordinary means will alleviate; great shivering; violent pain in the back and loins; pale and contracted skin; confusion of the intellect; a stiffness in the limbs, with great indisposition to make the smallest change in the posture of the body; thirst and frequent, involuntary sighing. After this condition of the system has continued for a period, variable with the intensity of the attack, the heart and arteries still without the control of the nervous system, and unregulated by its influence, react powerfully, and bring on a state of the system directly opposed to it, which is called the hot stage. The skin in this stage is hot; the headache from being dull and confined, is acute and throbbing; the pulse full and flowing; the desire for cold drinks much increased, and the patient is restless, often delirious. The duration of this stage is modified, and in some measure governed by the one immediately preceding it; when the cold stage has been long and tedious, it often happens that the one immediately preceding it is much shortened, and there is less suffering in it, but on the contrary when the former is short it is frequently the case that the latter is lengthened and the suffering in-

tense. This doubtless depends on which system the most nervous or circulating is influential in bringing on the disorder; frequently the cold stage is lengthened entirely by the morbid sensibility of the nervous influence without much involving the circulatory apparatus, and hence when it is over, there is but little arterial reaction or disturbance; on the contrary a short fit may result solely from want of action in the heart, without involving the nervous system more than is actually necessary to originate this diseased action in the heart, and hence there must be a greater and more continuous reaction. The regular paroxysms of intermittent neuralgia, induced by malaria, prove that there can be a partial and local affection in the nervous system from it, and may we not presume from this fact, that the same poison, under different circumstances, and in different constitutions, has the power of inducing different modifications of disease in the whole nervous system.

The hot stage is terminated by the supervention of copious perspiration, which rapidly abates all the symptoms, and brings on the state of apyrexia or intermission. This perspiration, appearing first on the forehead, passes on from the face until it becomes general, and when examined is found to possess fewer of the salts and less animal matter than the healthy. During the apyrexia or intermission of this fever, the skin retaining the original impression of the malaria, continues pale and contracted, and the features shrunken, whilst there is also disorder in the nervous system, as is shown by the indisposition to mental efforts and the great lassitude of which the patient complains. Before stating the means we have found most beneficial in the management of this disorder, we shall briefly review some of the leading remedies that have from time to time been recommended for its cure. To cut short the cold fit, it is advised by many practitioners, that a full dose of opium should be administered immediately before it is expected to come on. The most prominent condition of the system in this stage as we have already observed, is marked by an absence of circulation in all the external capillary vessels, and a congestion of the visceral organs, and larger internal vessels; hence if opium cuts short the disorder, it must do it by stimulating the heart to action, through its impression on the nervous system, causing it to overcome this congestion, by gradually soliciting, at each succeeding more active throb, the dormant fluid into the circulatory mass, and sending it equally throughout the frame. In many constitutions this remedy, though in this manner effectual, would induce dangerous congestions of the brain by causing too great a rush of blood throughout the organ; it cannot, therefore, be relied upon as a safe remedy or one fit for general use. Dr. McIntosh has recommended bloodletting in this stage of the disorder. Bleeding in the cold stage of intermittent fever is only following the example of Dr. Armstrong and many other practitioners of drawing blood in the congestive form of typhus and other fevers. Although the situation of the patient is similar in congestive fever to that of the cold stage of the

intermittent; that is, the blood is thrown from the surface of the body into the interior, and the heart is prevented from free action, to relieve this condition by the congestion of the organs internally and around it, and the engorgement of the larger vessels; yet this condition is produced by a far different cause; it is a gradual result of the continuation of a disease, and often depends on inflammation of some vital organ acting as a focus, and by its impression on the vital system, withdrawing its power to control the heart's action, draws the whole circulatory fluid, as before mentioned internally and around that organ. Here the symptoms loudly call for depletion to relieve that internal inflammatory action, which is the sole cause of the congestion. But the congestion of intermittent fever, coming on and running as it does to its acme, in a few hours, cannot be the result of internal inflammation. It is solely caused by the loss of power in the nervous system to control the action of the heart and arteries, which speedily brings on a loss of balance in the circulation. Inducing congestion first, which is speedily followed by reaction and its opposite condition. "May not," asks Andral, "the nervous system, in the manner it causes the sudden suffusion of hyperæmia of the cheek in blushing, exert an influence over the production of various pathological congestions? If these internal congestions, in the cold stage of intermittents, are caused by nervous influence, as we have endeavored to demonstrate, we should certainly not look for a remedy in bloodletting." To prove the insufficiency of this remedy in these cases, we will give another passage from Andral. "It is a fact," says this able pathologist, "established by every day's experience, that a hyperæmia may exist singly and independent of any organic lesion, and yet refuse to yield to either local or general abstractions of blood, however copiously employed or judiciously timed. By the employment of bloodletting the organ is relieved of part of its superabundant fluid, the general mass of blood in the circulation is diminished and a powerful cause of excitation is thus withdrawn from the system, but neither by local nor general bleeding can we remove the unknown cause, under the influence of which the hyperæmia was originally developed. If, however, this cause be not particularly active or violent in its operation, its influence may be considerably diminished or completely paralysed by sanguinous abstractions, as the blood is withdrawn from the seat of irritation as often as it tends to accumulate there, and the hyperæmia is thus prevented from establishing itself in the part. But if the exciting cause of the congestion (the Thorn of Van Helmont) be more violent in its action, we shall in vain attempt to remove it by bloodletting; though we leave but one drop of blood in the body, that drop will, in despite all our bleedings, obey the summons of the irritating cause and fly to the part affected." From our experience and observation in this disease, we are led to suggest in the treatment of the cold stage only such remedies as will palliate the symptoms and hasten the necessary reaction. We usually order the patient to be covered in bed, with warm applications to his ex-

tremities, aided by sinapisms when the case is urgent, inducing him at the same time to drink only warm diluents. When the feeling of cold is intense, and the shivering severe, I have found great relief to accrue from the respiration of the steam from hot water. I have had the rigors cut short in my own person, by the use of this simple remedy with a great diminution of the suffering and evident shortening of this stage. This treatment of course should be reversed in the hot stage. It is during the apyrexia or intermission, that the chief remedies should be directed to secure a permanent cure: and the nature of the disease being a morbid derangement of the dermoid tissue, the nervous and circulatory system points out the proper remedies.

The chief indications are to restore the skin to its proper functions, and to brace up the nervous system that it may resume its influence over the circulation, and by arousing the heart's action to maintain a perfect equality in the whole circulatory mass, that it may distribute the blood throughout the frame, preventing all local congestions. In simple intermittent fever remedies answering these ends are all that are required, and the practice of purging the patient with mercurial or other cathartics, so common in the South and with us, is unnecessary and often mischievous. That it is unnecessary, I am convinced by the successful treatment, within the last two years, of upwards of two hundred cases of genuine intermittents in which no cathartic was employed, until after the paroxysm was arrested, and then a cathartic of the mildest kind completed the cure. From the generally simple nature of this disease, and the knowledge of the remedies employed in its cure being possessed by every one, it is often treated without a physician, and the public having fallen into the impression originally obtained from the profession, that active cathartics should always precede the usual tonic remedies, often do great mischief by the injudicious use of drastic purgatives. We have witnessed cases where serious injury and even death have resulted from their untimely administration. A sprightly youth, just returned from a school located in a healthy district of country, came to spend a few weeks at his father's, and after a day or two was seized with chills which generally pervaded the neighbourhood at that time. As soon as the fever was off, a dose of *Peters's Pills* was administered by his father. During the intermission he went about, but was considerably annoyed by the incessant purging of the dose he had taken. This continued, (as no means were taken to arrest it, from the belief it was necessary to have a real clearing out,) the chill came on (no doubt induced by the debilitating influence of the pills) sooner than was expected, and so completely was the system prostrated that it never rallied from the congestion of the cold stage, and the youth died next day. His brother, a few years his senior, coming to his funeral, was taken with the chill—treated in the same manner, with the same result; whilst under a tonic treatment not a case in the whole neighbourhood terminated unfavorably, and these were actually the only deaths

that occurred from the disease, during the whole autumnal season. We consider that cathartics, though they may not always be injurious, are unnecessary in the treatment of this disease, until after the fits have been arrested, then in most cases the mildest kind alone are required.

The preparations of quinine have entirely superseded the use of the cinchona bark, but in obstinate cases it is known they frequently fail to arrest the paroxysm entirely. The quinine acts by its stimulating effects upon the brain and nervous system primarily, secondarily through this impression on the circulatory apparatus, ultimately upon the digestive organs. To its bracing effects upon the nervous system is to be attributed entirely its tonic powers. Hence it can be perceived, that alone, it answers only one of the indications which the nature of the disease points out for its cure, and, therefore, cannot be relied upon as a certain remedy unless assisted by agents to fulfil the other indications. The functions of the skin are at fault, as well as those of the nervous system, and circulatory apparatus—the first named tissue is primarily affected by the disease, hence it must be important in the successful treatment to restore its healthy action also. A diaphoretic and measures to induce diaphoresis, should be always combined with the tonic remedy. The particular preparation we have found most successful is a combination of sulph. quinine and Dover's powder in doses of one and a half gr. of the former to a gr. of the latter given at an hour's interval and commencing early enough before the expected attack, to introduce into the stomach 6 or 8 grs. of the diaphoretic and the quantity of the tonic corresponding. In cases where there was a perfect intermission I have never known this compound to fail. The patient should remain in bed and be allowed to drink freely warm drinks: and when the case is very urgent have mustard poultices applied to his arms and legs. After the fits have been checked, a simple laxative in most cases will complete the cure, unless the long protraction of the disorder has brought on derangement in the visceral organs, then remedies suitable to the correction of this disorder should be employed, and it is a fact that they act with better success, after the paroxysms have been thus checked, than when their operation was liable to be checked by its supervention.

As the loss of healthy action in the skin and its capillaries, and the derangement in the nervous system, are the primary and principal causes of the paroxysm of this fever, they should be corrected and removed before any attempt is made to remove its consequences in the visceral organs; when the contrary course is adopted, the remedies to remove the functional derangement of the liver and the congestion of the spleen, by their irritation in the perimæ visæ, increase the disturbance in the nervous system, and favour also the internal collection of the blood, as well as the loss of balance between the internal and external capillary circulation, and hence while they relieve the derangement, for which they are given, they have a tendency to induce the same train of diseased action which originally produced them,

In other words they leave the patient, by this effect, more disposed to internal congestions and the paroxysms of ague. I think the following case will prove the truth of these observations. A gentleman consulted me, who had been affected with ague for six months, during which time he said he had taken his two hands full of blue pills and tonics and tonic mixtures in abundance: all of which checked the disease for a time. I found his skin pale and without the least healthy action—there was an entire absence of all circulation, apparently in its tissue—he was languid, feeble and low spirited—a functional derangement of the liver had rendered his digestion bad, and there was an extraordinary enlargement of the spleen. The ague being of the quotidian type, so soon as the fever left him, we commenced the treatment disregarding the condition of the liver and the spleen with the sulphate of quinia and Dover's powder as directed, assisted by frictions on the skin with coarse towels; placed his lower extremities in a tepid bath into which mustard had been thrown, and caused him to drink freely hot lemonade and coffee. The usual time passed without bringing the paroxysm. The same remedies were continued from day to day with like results, taking care gradually to diminish the quantity of the tonic and diaphoretic and substituting a more generous diet, with slightly stimulating drinks in their place, whilst the bowels were kept freely opened with mild laxatives. In the meantime the size of the spleen began to diminish—the skin began to assume a more healthy appearance and his digestion and appetite was much improved. We now recommended a glass of wine occasionally during the day, a generous diet and active exercise, which in a few weeks restored him to perfect health. Here the functional derangement of the liver and the enlargement of the spleen were caused entirely by the congestion in them, which congestion was caused by that condition in the circulation induced by the condition of the skin and nervous system in the disorder, and though both were removed by the course of mercury and aperients, yet they returned again, because the original cause (the Thoria of Van Helmont) still existed, and it is probable the irritation of their action hastened each succeeding attack. Whereas the simple remedies we employed effected a cure by restoring the balance between the circulation in the capillaries and the great vessels, and by bracing up the nervous system, which stimulated the heart to action, and kept up a free and equal circulation throughout the frame. This removed the congestion in the liver, and enabled it to resume its healthy action, and solicited into the mass of circulation that blood which had remained dormant in the spleen swelling out its tissue to an unnatural extent.

There is a fact connected with this disease that does not seem to be noticed by writers, and which we think goes far to establish our view of its pathology. It is the manner the paroxysms are brought on and controlled occasionally by the nervous system. The operations of the mind have a wonderful influence in protracting the complaint and when properly wrought

on have equally as mysterious a power to correct it. Among the ignorant and superstitious advantage is taken of this influence on the mind, to arrest the complaint. I have seen genuine intermittents arrested without medicine by a system of trickery employed by an old woman, too ridiculous to mention. It was highly important (and she would undertake no other) that the invalid should have perfect confidence in her powers. I arrived on one occasion to see a man, about the same time with this modern sybil, who I found had been first sent for, but during the reaction the situation of the patient became so alarming that I was also called in. Being somewhat relieved as the fever went off, and having full confidence in the old hag as well as an unconquerable aversion to "Doctor's physic," he at once gave her the preference. My incredulity induced me to watch the case—I found, so soon, as the silly manipulations of the woman had been finished, the utmost confidence established in the man's mind that he would be no more sick: as soon as he was able he went about his work—thought no more of the chill, and the time actually past without a return, nor did I hear of his being sick any more during the whole season. This man was very poor and ignorant, laboured hard, and his constitution was in that condition always induced by the continual impressions of malaria; that is, his skin was pale and sallow, and there was a want of vigour and activity, as well in the organs of his mind as the functions of the body. Could not her success in this case be attributed to the fact, that the full confidence in her powers induced a degree of excitement in the man's mind, which excitement braced up the nervous system generally, and which, aided by the exercise he took, kept up an equal circulation, preventing all internal congestions without which there could be no paroxysm. In protracted cases, when the hour arrives for the chill to come on, the mind of the individual, having been wrought on by this expectation is exactly in the condition—a state of depression—favourable for bringing on the attack; but suppose this individual believed certainly he would have no attack, how different a state of mind he would be in: instead of composing himself for a chill perhaps sitting over a fire or reclining in the sun, he would probably be exercising himself or enjoying company and cheerful conversation. A case came under the observation of my friend Dr. James May of this town, aptly showing the influence of the mind in this disease. A gentleman had been treated 18 months unsuccessfully for this disease—his constitution was sinking under its repeated attacks. After nearly every method of treatment had been exhausted without effect, it was observed by his physicians, that he usually retired to bed shortly before and awaited a certain hour, after which the fit came on. Taking advantage of this circumstance, the clock's hands were removed back without his knowledge, and whilst he lay and awaited it to strike the hour of four, which announced his chill, he fell asleep. After a nap of several hours he awoke, no paroxysm came on and from that hour he regained his health.

Petersburg, March 31st, 1840.

ART. VI.—*Observations on the Benefits of a particular mode of Bloodletting, and of large doses of Opium in the treatment of the Acute Phlegmasia.* By THOMAS BARBOUR, M. D., of La Grange, Alabama.

AT this enlightened period of Medical Science, it may be deemed altogether superfluous to occupy the pages of a journal with arguments to prove the efficacy of two such common therapeutical means as bloodletting and opium, in the treatment of acute inflammatory affections.

I am aware that the value of these remedial agents—and especially that of the former—has, to a certain extent, been long known, and that they have been quite extensively applied in the treatment of the important class of affections under consideration. But however valuable they may have heretofore been regarded—and however encouraging the success which has attended their application, I am fully convinced that, by the greater number of practitioners, they are not duly appreciated, and that they are susceptible of such modification in their administration as to afford results which must justly entitle them to the appellation of heroic remedies.

In order to make the practical suggestions which I design to offer—more clearly understood, I will very briefly consider, First, the proximate cause of inflammation; Secondly, the consecutive phenomena which constitute the pathology of inflammation; and Thirdly, the prominent indications of treatment, and the best means of fulfilling those indications.

What is the proximate cause of inflammation? And what are its successive phenomena? These are questions which have for a long time excited the most animated discussion and concerning which there is yet considerable discrepancy of opinion. It is not my intention to enter into an elaborate investigation of this subject, in order to establish or refute the adverse doctrines of Hunter, Philip, Thompson and others; which involve the conditions of the capillaries;—whether their action is increased or diminished—this would exceed the limits I proposed to myself. My special object, now, is to inquire, what is the *fons et origo* of inflammation? What is the first link in the chain of morbid action? And endeavour to exhibit the relation between this and the continuous chain of phenomena, and thus deduce the principles of treatment.

All the causes which are capable of developing inflammation make their primary impression upon the sentient extremities of the nerves distributed to the various tissues; and in consequence of this impression a peculiar excitement is established which we call irritation. In what this consists we know not; and perhaps will never know—as there is no appreciable lesion in the nervous filaments. But we very rationally infer from the phenomena consequent on the application of an adequate cause, the most characteristic of which, is pain indicative of altered sensibility, that there must be some important change in the constitution of nervous matter; sufficient to explain the

disordered actions which characterize inflammation. This change may consist in some alteration of the molecular arrangement of nervous matter—which might as reasonably account for manifest changes in vital properties, as an alteration in the atomic constitution of any chemical element, or compound would account for material changes in its properties.

Whatever may be the nature of irritation—it unquestionably constitutes the *primum mobile*, on which all the successive phenomena of inflammation are dependent. This is to be explained by reference to an established law of the animal economy—founded on the intimate relationship which exists not only between all parts of the nervous system, but also between the nervous and vascular systems. This law may be thus illustrated; whenever from any cause an abnormal excitement or irritation is occasioned in any part of the nervous system; that part becomes a centre of attraction, there is an undue determination of nervous influence to the seat of irritation, in consequence of which, there is an unnatural exaltation of its vital properties;—and thus is induced an inequilibrium in nervous distribution. The sympathizing vascular system now participates; there ensues an afflux of the circulating fluid to the affected point, and thus is induced a corresponding loss of balance in the circulation. All the consequent phenomena of inflammation can now be easily explained. The pain is dependent upon the preternatural exaltation of the vital forces of the part, in consequence of which, there is altered sensibility; the augmented heat seems to depend partly on the altered condition of the nerves; and partly on the increased volume of circulating fluid; the redness is obviously attributable to the increased diameter of the capillaries, caused by the increased volume of blood, and the expanding influence of augmented heat; in consequence of which, there is a free admission of the red particles; this is very plainly exhibited in inflammation of the conjunctiva—where often in a few hours almost innumerable vessels which, in a natural condition convey only white fluid, and are, of course, invisible, become obvious to the naked eye, in consequence of their enlargement, and admission of red blood; the swelling is dependent upon the enlargement of the capillaries—arterial and venous; upon increased volume of blood, and also upon effusion of fluid consequent on the interruption to the circulation in the capillary vessels.

If the local irritation is considerable, the general nervous system, sooner or later, becomes involved, and reacting on the heart and great vessels, causes an increase in their action, and, of consequence, an accelerated motion in the blood. Thus is established that general reaction, which constitutes the symptomatic fever of inflammation.

The acute inflammations, which so often occur in the course of fever, and which are said to supervene upon febrile reaction, as bronchitis, gastritis, enteritis, &c., are most probably dependent upon nervous irritation, excited in their respective tissues by the primary morbid impressions of the

specific causes of fever, which irritation, in my opinion, forms the first link in the chain of febrile disorders.

Irritation may, therefore, be considered as absolutely prerequisite to the establishment, not only of primary and secondary inflammation, but also of every form of fever. It is this which kindles the first spark of inflammation, and ultimately fans it into a flame. In order, therefore, to extinguish this flame, it is essentially necessary to destroy this vital incendiary, which first ignites, then furnishes fuel to the fire, which is but too apt to consume not only the apartment in which it originates, but eventually, the whole fabric. We come now to the third, and most important part of our subject, the leading indications of treatment, and the best means of fulfilling those indications.

It is obvious, from the above considerations respecting the proximate cause, and pathology of inflammation, that the prominent indications of treatment are: 1st. To remove the preternatural excitement of the nervous and vascular systems; and 2d. To prevent the subsequent development of nervous excitability.

How are these valuable ends to be effected? The most efficient agent for the accomplishment of the first is, unquestionably, bloodletting, if judiciously administered. It is one of the most powerful sedative agents which we possess, and exerts a direct influence upon the nervous system, tending in an eminent degree to depress the vital forces, and to produce from the first the impression of sedation. Hence, it is the most effective weapon for the subduction of inflammation, which, as we have shown, is characterized by a preternatural exaltation of the vital powers. When carried to a proper extent, especially in the commencement of acute inflammatory affections, it will, most generally, effectually overcome the nervous irritation which we have considered as the proximate cause of inflammation, and as a necessary consequence, in rapid succession, all the consequent phenomena.

A cursory glance at the constitutional and topical effects of bloodletting will conclusively exhibit its *modus operandi* in the removal of the acute phlegmasia.

When carried to a certain extent, it makes a strong impression upon the brain and whole nervous system, which impression is one of general sedation, in consequence of which, the exalted vital forces become very much depressed, and nervous irritation is thereby removed or greatly diminished. Next in the order of effects, the heart, and great vessels, over which the nervous system presides, are diminished in their action, and the momentum of the circulation, of course, becomes greatly decreased. These effects are manifested by the comparative slowness and softness of the pulse, and by a greater or less mitigation of the general symptoms of fever as restlessness, heat of surface, thirst, &c.

Nor are the topical effects less obvious; the pain which may have been severe, is either entirely removed, or greatly lessened, in consequence of

the abatement of nervous irritation, the original cause of altered sensibility; the heat which is generally intense is very much lessened, in consequence of the depression of the vital manifestations of the affected part, and, perhaps, also to diminished volume of blood; the redness often rapidly disappears, in consequence of the diminution of the calibres of the capillaries, which had been dilated, as it were, by the increased volume of the circulating fluid, and the expanding influence of the augmented heat; and finally, the swelling subsides, in consequence of the diminished diameters of the capillaries, the diminution of the volume of blood, and also to the gradual draining of blood from the venous capillaries, which had become stagnated in them, in consequence of the great interruption to the capillary circulation.

Here we perceive is a condition which closely approximates a healthy state, nervous excitability being greatly depressed, and all the phenomena consequent on its exaltation being nearly removed. If this condition could be maintained for some time proportioned to the urgency of the attack, and the subsequent development of nervous excitability be prevented, the disease, most generally, would be extinguished at once.

When bloodletting is carried to an inordinate extent its effects upon the constitution are much more powerful; the balance which naturally exists between the nervous and vascular systems, being broken up, the brain the source of nervous influence, ceases to receive a due proportion of the vital fluid for the healthful performance of its functions; it consequently ceases to transmit an adequate amount of nervous energy to maintain a healthy performance of the functions of organic life; hence the action of the heart, and of the respiratory organs become almost extinct, and the blood, of consequence, nearly ceasing to circulate, accumulates in the heart and the contiguous great vessels. All supply being now cut off from the brain, it becomes incapable of discharging its vitally important functions, and the subject rapidly passes into a complete state of insensibility. Thus syncope which is a state of suspended animation is induced; the pulse either ceases to beat or is scarcely perceptible, the respiration is either altogether extinct, or very feeble; the surface becomes pale, shrunken, cool or cold, and the countenance exhibits the general aspect of death. This condition is not far removed from an entire extinguishment of life, and if not quickly relieved by placing the patient in the horizontal posture, and using some gentle excitant as sprinkling the face with cold water, or applying ammonia to the nose, in many instances, the last remaining vital spark would speedily go out.

Notwithstanding the bold and dogmatical assertions of authors, and those of high reputation, that bloodletting should always be carried to full syncope in the treatment of acute inflammatory affections, and that this should be the criterion of the extent to which it should be carried in every case, I am fully persuaded that it is in very many cases a dangerous measure, and that

in a great majority it is altogether unnecessary. I say it is dangerous, because on the one hand, so great a degree of tolerance is sometimes afforded by the disease, that very often an alarming amount of blood is required to be lost before its induction; and on the other, in cases of early life and old age, the recuperative powers of nature are so feeble generally, that its induction might eventuate in fatal collapse. It is unnecessary, because that condition of general secretion, which I have described as preceding syncope, is fully adequate to subdue the severest forms of acute inflammatory diseases; if it is sufficiently prolonged, and the subsequent development of nervous excitability be prevented by appropriate means.

These then are the two great principles of treatment which I desire to impress on the minds of my professional brethren: 1st, to depress the vital forces to this lowest possible extent without the induction of syncope, and to prolong the state of depression for a length of time, varying according to the constitution of the patient, and the intensity of the disease; 2d, to prevent the subsequent development of nervous excitability.

I will now very briefly detail the plan of treatment which I pursue and would recommend it in order to attain those desirable ends.

If the patient be robust, and the disease of intense character, make him stand up, if otherwise, sit up, unsupported; open a large orifice so as to admit of a full stream; keep the fingers upon the pulse and direct close attention to it, so as to judge of the slightest change in it, examine the patient's countenance carefully so as to detect its changes, inquire often of the patient if he feels any unpleasant sensation, as nausea, vertigo, &c., and as soon as the pulse begins to fail, and the countenance to become a little blanched, or vertigo and nausea to be felt, apply the finger over the orifice, cause the patient to lie down with his head and shoulders low, and if he seems to grow paler and sicker, lest syncope should occur, sprinkle the face with cold water, or apply ammonia to the nose, either of which will revive very much. Keep the fingers all the time upon the pulse, direct attention to its frequency and power, and if there is a disposition to reaction, make the patient rise up, stand, or sit, according to circumstances; take the finger from the orifice, and cause the blood to flow, still keeping the finger upon the pulse; and as soon as failure is again perceived, apply the finger to the orifice, lay the patient down, and if necessary, use some gentle excitant as above directed. If after the second operation the frequency and power of the pulse should be pretty well subdued, and the interval of sedation, which is, as it were, a complete truce, is tolerably long, the arm, may be properly secured. The vital powers are now very much depressed; the enemy has been weakened by a vigorous and persistent assault; but if permitted to rest undisturbed, it will gather strength, and will be sure to make desperate resistance. This then is the time to make powerless the foe; by fortifying the citadel well, so as to make it impregnable. To effect

this desirable object, I would administer from two to four grains of opium according to the diathesis, and the tissue involved, persons of great nervous irritability, and in whom the serous or fibrous tissues are inflamed, requiring more, on account of the greater tendency to the development of nervous excitability. This powerful sedative agent when given in large quantity at first and afterwards repeated in the proportion of one grain every hour or two, will most generally be found capable of completely controlling the nervous system, and of effectually preventing the re-development of morbid excitability, and of consequence, that of hemorrhagic reaction. In some cases, as in pleuritis, pleuro-pneumonia, acute *primary* bronchitis, and laryngitis, tartar emetic in small portions, as one-fourth of a grain every hour is certainly a very valuable auxiliary to bloodletting and opium, contributing considerably to their sedative effect. As opium tends to lock up the secretions, especially that of the liver, it is advisable to combine with it minute portions of calomel, say one-fourth or half of a grain every hour, or two; this tends not only to restore the various secretions, but also to induce a general revellent influence, thereby subtracting from the local affection. In order to dislodge from the bowels the usual vitiated matters, which would dispose to redevelopment of irritation, and to divert from the original seat of disease, mild purgatives should be occasionally administered; I prefer castor oil, Seidlitz powders, or sulphate of magnesia in senna infusion. If the state of the stomach will not admit of internal purgatives, an enema should be substituted. The diet and drinks, especially in cases of vigorous sanguine temperaments, should be the mildest and most unirritating, such as acidulated barley, or rice water, slippery elm tea, or thin arrow root tea.

The patient should be kept as quiet and composed as possible from the first; with this view the room should be somewhat darkened, and kept as silent as circumstances will permit—so that, if there should be any disposition to sleep, it might be indulged in. These circumstances, trivial as they may be thought by some, exert an important influence, and should be more strictly attended to—both in inflammatory affections, and in fevers generally. Our best directed means are often counteracted by inattention to them.

As the vital powers are much more liable to depression—in the inflammations of mucous membranes—especially in gastritis—enteritis, or bronchitis,—we can not adopt as active a course of treatment as would be admissible in the acute inflammations of the serous and fibrous tissues, in which there is generally great exaltation of the vital forces—and greater powers of resistance.

The same remark is applicable to the treatment of the various acute inflammations which arise in the course of fever—excepting when they are developed very soon after the establishment of febrile reaction; in which event, prompt and energetic treatment should be adopted. If, however, they occur

at a later period when, most generally, the vital powers are considerably depressed, active treatment, and especially general bloodletting, would be out of the question. If any thing can be effected at the stage, it must be done by the use of topical bloodletting; counter irritation over, or near the affected organ; the general revellent influence of mercury—which causes a diffusion of excitement; the sedative influence of opium; and the judicious use of stimulants, which often act very beneficially by stimulating the over distended capillaries, and thus enabling them to contract and relieve themselves of congestion.

The plan of treatment which I have detailed, if somewhat modified according to the constitution, the tissue involved, and the stage of disease, will generally subdue the most violent forms of inflammatory disease. Sometimes, however, in spite of our utmost efforts to prevent it, violent reaction will occur; in such cases, the same plan of treatment, but with much less activity, should be adopted. The system in these cases will tolerate very large doses of opium—and indeed our main reliance must be placed upon it, for it alone can control the nervous system, and prevent irregular development of excitement which is consequent on, and directly proportionate to the loss of blood. Hence we perceive that it is of inestimable importance to subdue the disease with as little expenditure of the vital fluid as possible, as hemorrhagic reaction and nervous excitability—incident on inordinate loss of blood, increased *pari passu*. This important truth is but little known, or if known, is but little regarded. Most practitioners are not acquainted with the morbid effects of bloodletting on the constitution, and regarding it as the “sheet anchor,” in almost all inflammatory affections—they continue to bleed their patients, and *profusely too*, so long as the system is able to react, not suspecting that the successive reactions are the effect of morbid excitability, which is developed by the favourite remedy. Thus the circulation continues to be drained, until the *vis vitæ* becomes so much depressed, that the patient is precipitated into a fatal collapse—or if he survives, the blood becomes so attenuated and impoverished, and the vessel so relaxed, that a general anæmic condition is induced which results in universal dropsy.

Experience justifies me in asserting that the plan of treatment which I have suggested, is admirably calculated to avoid these serious evils.

In making this communication to my professional brethren, my motive has not been to lay claim to any originality; the object at which I have aimed, is to deduce from my experience a few considerations in attestation of the great truths which I have attempted to exhibit; with the hope that they might more particularly attract their attention to the all important subject which I have very imperfectly investigated.

ART. VII.—*History of a case of Catalepsy—occurring in a boy at the age of fifteen years.*—By ISAAC PARRISH, M.D.

THE following case is believed to possess sufficient interest to warrant its publication, not so much from any practical value which may be attached to it, as from the extreme rarity of the affection, and from the curious phenomena which it presents.

Many of the appearances observed correspond with the description given, of that state of the system called trance, in which the evidences of life have been so slight as to induce the belief that death had actually occurred. The trance would seem, indeed, to be nothing more than the most aggravated form of the cataleptic paroxysm.

This disease has been particularly described by some of the old writers, and a small number of cases are to be found, detailed in their works; but very few have been published in modern times.

The present case differs from any other which I can find recorded, in the length of the paroxysms, and in their frequent recurrence during a period of nearly two months.

It is submitted to the profession without comment, the writer preferring to state the facts as derived from his daily notes, rather than enter into extended remarks.

Case.—I was called 1st month (January) 10th, 1840, to visit J. H., a lad about 15 years of age, son of a saddler, residing in Market street. I found him lying upon his back, motionless, and in a state of partial insensibility. The pupils were largely dilated, and the upper eyelid raised so as to expose the whole outer circle of the iris; the eye balls were fixed as in a wild stare. On bringing a lighted candle towards the eyes, there was an evident contraction of the pupils, although it was much slower and more feeble than in health. The respiration was perfectly calm and easy, and there was a placidity and fixedness of countenance, which struck me as remarkable. The pulse was soft, regular and rather slower than in health, and the skin was of a temperature nearly natural. By strong efforts the patient could be partially roused, when he would moan and fret, and complain of pain in the roots of his teeth, which was attributed to salivation under which he was labouring. In addition to these symptoms there was palor of the skin and œdema of the face and upper part of the neck.

On an inquiry into the history of the case, it was found that the patient had been indisposed since the night of the great fire on Chesnut street wharf, 10th month (October) 5th, 1839. This event made a strong impression upon his mind; he returned home from the fire, fatigued and wet, and went to bed without changing his clothes. He arose next morning quite unwell, although he attended to his work as usual.

For several nights following he was unable to sleep, and declared that as soon as he closed his eyes, the scene of the fire would come before him, causing him to cry out with alarm.

He now began to complain of headache; a feeling of constriction about the

epigastrium, as if "the stomach was drawn in towards the back," of a tearing sensation in the bones; he imagined that his teeth were loose, and that the flesh was coming off his bones, &c.

In this condition, Dr. Mulford of Camden, N. J., was applied to, who supposed the patient to be labouring under a slight alienation of mind. He had at this time a puffiness of the face, which was the only external evidence of disease. Dr. Mulford prescribed various purgative medicines; but especially moderate portions of crem. tart. and jalap, and at length small doses of mass. hydrarg. "This latter," says Dr. M., "appeared to have a very decided effect. It caused a slight soreness of his mouth, and immediately there occurred a great improvement in all his symptoms."

He was under Dr. M.'s care for several months, during which time he had intervals of tolerable health, in which he took excursions to the country, or resumed his work. He was, however, more fretful and desponding than in health, although his disposition was naturally melancholic.

While under the mercurial impression, he crossed the river on a cold day, and exposed himself for a long time to the air, this brought on a renewal of his symptoms in a new and more violent form, and induced Dr. Mulford to recommend him to my care, as he found it impossible to visit him regularly.

For several days previous to my being called, I learned he had been unusually desponding, and sat during the greater part of the day with his head bent down toward the chest; it appeared difficult for him to look up; he joined in conversation, however, and partook of food, although he refused to work; and when urged to it cried and fretted. On the 9th, he was taken to bed, and speedily lapsed into the condition in which I saw him.

My first impression was, that the symptoms described were produced by serous effusion upon the brain; an opinion which was strengthened by the long existence of œdema of the face; and yet there were other symptoms existing, and some wanting which rendered the diagnosis very difficult.

For the first two or three days of my attendance, he could swallow medicine, articulate words, and be made to understand our wishes, although he laid with dilated pupils, fixed eye, set features, &c. I discovered no rigidity of the muscles, except a difficulty in protruding the tongue, which he had from the first. I succeeded on several occasions in forcing his jaws open with the handle of a spoon; this appeared to cause him great pain; and so great was the tendency to remain open, that I was obliged to assist him in closing them. He complained of a sense of oppression in breathing, although his respiration appeared perfectly calm. He had at one time indistinct vision, although he would wink at the sudden approach of an object before him. His hearing appeared to be obtuse. During this period the treatment consisted in the free use of purgatives and diuretics, which he took without difficulty, and which operated freely, the patient being conscious of the occurrence of discharges. Blisters were also applied to the temples; and thin chicken broth was allowed for nourishment.

These remedies did not produce a favourable impression upon the disease; the insensibility became gradually more complete, until the jaws were completely closed, no attempt was made to articulate, and the most powerful efforts failed to produce consciousness. The pulse still continued soft and regular, the skin warm, the breathing so gentle as to be scarcely perceptible, there was no rising of the chest, or movement of the nostrils, the statue-like expression of the countenance was now still more remarkable, which, with the pallid face, the immoveable position of the body, the dilated pupil and

fixed eyes presented a most singular appearance. There was at this period no chance of giving medicine by the mouth, and a blister was directed to the back of the neck and occiput.

On the following day, after the application of the blister, about the 19th, I found him roused; the blister had drawn well, and had discharged a very large quantity of fluid. He was now more animated than at any time since my attendance; answered my questions distinctly, though in a whining tone; complained of no pain except in the roots of his teeth; he still had a difficulty in putting out his tongue, although he swallowed with ease, and appeared very hungry.

He continued to improve during this and the following day, and was so well as to be able to sit up, and appeared to take an interest in what was passing. On the evening of the 21st, I found him less conscious, and observed an evident tendency to sink into the former condition, he had the same expression of countenance as before, with dilated pupils, &c. On the following morning, he was completely insensible, and I discovered for the first time a rigidity in the muscles of the upper extremity. A blister was now directed over the scalp—but owing to some difficulty in procuring a barber, the hair was not shaved until the period of my evening visit. I found that in raising the head, the muscles of the neck were completely rigid, drawing the head back, and requiring us to elevate the shoulder, and upper part of the body at the same time. The patient, during the operation, preserved the same unconsciousness, and fixedness of countenance, except when the blistered surface on the back of the neck was rubbed, and then he exhibited slight evidences of feeling by moaning and change of countenance.

After the shaving he lay for some time, apparently insensible to any thing around him, and then roused up, asked for drink, and complained very much of the pain which had been caused by the operation. The blister was applied, and on the following morning, I found him in the same condition as on the preceding day. In the evening, Dr. Otto, visited him in consultation. The blister had now been on for forty-eight hours, without producing any impression on the symptoms. The patient was still in the same insensible condition, and it was impossible to rouse him; the pupils were, however, still sensible to light, and there was slight winking in passing objects rapidly before the eyes. No rigidity of the arms was evident at this period. It was agreed to allow the blister to remain on during the night, in the hope that its proper action, would be followed by the same effects which succeeded that on the back of the neck. The state of the bladder was examined into; the urine was passed in bed; no distension apparent.

24th. The blister had produced but slight vesication; there was no improvement in the condition of the patient; he had not been sensible since the evening of the 22d; his pulse continued good, skin warm; blister allowed to remain on.

25th. Sufficiently roused to swallow and speak; he had suffered from strangury in the night; more cedema of the face than usual; bowels costive. R. Ext. elaterii, gr. j; Pulv. gum arab. ℥j; Aquæ menth. ℥ij. M. Tablespoonful for a dose every four hours. Blister was removed, and scalp dressed with a poultice.

26th. Had taken two doses of the elaterium, which had produced several copious watery discharges, attended with nausea and retching. Skin cool; pulse feeble, and sixty in the minute; cedema almost disappeared; mind quite clear.

Directed nutritious drinks, and five grains of carb. ammon, every two hours in julep; blister to be dressed with basilicon and spirit. terebinth. The patient continued conscious during the day, talked rationally with those around him, and took drinks freely. He refused, however, to take more than one dose of the medicine. During the night he relapsed, and on the morning of the 27th, he was entirely unconscious, with the same expression of features as heretofore described.

His system had reacted since the operation of the medicine; skin warm; pulse stronger. On raising the arm to feel the pulse, Dr. Otto discovered an unusual rigidity of the limb, and in elevating it from under the bed clothes, and raising it up, it remained in the position in which it was placed; the forearm was then bent upon the arm, while in its raised position, and the same result followed; the fingers were now bent separately, and together, and always remained as they were placed; the hand was flexed upon the forearm, then bent backward, and then pronated, retaining each time the posture given to it. The same phenomena were presented in the opposite limb.

The lower extremities were stiff and unyielding, and it was impossible by a single effort to bend them; by repeated motions continued for about a minute, by raising the limb, and grasping it above and below the knee joint, the resistance of the muscles was overcome; and the flexion easily accomplished at this joint—the same process instituted at the hip joint was attended with a like effect.

After the limbs were flexed they maintained the bent position, until altered by an attendant. During these motions, the fixed statue like countenance, and inanimate stare of the patient remained unaltered; and when his arms were outstretched, and moulded into such attitudes as our inclination dictated, he presented an appearance truly singular.

On lifting the trunk of the body into a sitting posture, (which was accomplished with difficulty) we found it was not able to maintain the position without support.

The insensible condition of the patient while these motions were in progress, continued until evening, when he had another interval of consciousness of several hours' duration, in which he took freely of nourishment and conversed with the nurse. He referred to his inability to speak, at times when he knew every body around him, and expressed his pleasure at being now able to express himself.

28th. Found the patient lying in the same condition as at our visit yesterday—pulse and skin as good as usual, muscles in the same condition.—Blisters were directed to the inside of the legs.

29th. No change from yesterday. Were informed that the patient had had intervals of consciousness during the night preceded by sound sleep, in which the eyelids were closed and the inspirations were as deep as in natural sleep, amounting even to snoring—these we were told had occurred several times before, and were always followed by an interval of consciousness.

On awaking from his first sleep last night, he was unable to speak but made signs for a vessel to pass urine—and assisted himself in relieving his bladder. He then began to suck his thumb as a sign for a stick of sugar candy, to which he was very partial; this was handed him, he seized it with avidity and soon demolished it. After this he made known his wants by words. This interval continued with occasional periods of sleep, from 9, P. M. until 8, A. M.; but at the time of our visit about an hour after, he had

relapsed into a cataleptic condition. A mixture containing *ol. succini*, *gtt. v.* to the tablespoonful, was directed, to be given every hour should an opportunity occur.

30th. Patient unconscious—muscles rigid, &c. We found on this visit that active motions of the limbs continued for a minute or two, produced a complete relaxation, the muscles ceasing to act when the limb was placed in any given position. The spasm however recurred in a few minutes presenting the same phenomena as before described. We were informed that the patient had had several naps during the night between which he had roused up, and asked for food; he had taken about a quart of gruel and considerable sweetened water. He declined taking the medicine regularly, although several doses had been given.

31st. Insensible, constant twinkling of the eye lids—iris more covered, pupil less dilated—some inflammation of the conjunctiva of right eye, with mucous discharge—has not been conscious since the night of the 29th, pulse 104 and more feeble; perspiration issuing from the face and forehead—system evidently exhausted—muscles rigid as usual. *Enemata* of *lac assafoetida* were directed.

February 1st. Patient lying with his mouth open, eyes fixed, and muscles rigid, &c.—pulse 76, and more full than yesterday. Were informed that he fell asleep after the dressing of the blister in the evening—in a short time his attendants heard him move—and on going to him found him roused and moaning as if in pain—he raised his arms which had been perfectly rigid since the morning of the 30th, and threw off the bed clothes. He then made signs for the chamber pot—took it in his own hand, and passed a large quantity of urine. He sucked his finger as a sign for candy of which he had before partaken. When this was handed to him, he seized it with avidity, and sucked it with evident pleasure. He drank freely of sugar and water, barley water, &c. and took several doses of the mixture containing oil of amber. After remaining in this condition, for several hours—being perfectly conscious without the power of articulation—he again closed his eyes and slept soundly until after midnight. He then awoke, put his hand up to his neck as though in pain there—and appeared to make ineffectual efforts to speak. After this he slept at intervals, until 7 A. M., when he took drink; and then relapsed into the condition in which we found him at our visit at 9 o'clock.

2d. Cataleptic at our morning visit—although about an hour before he had been able to swallow—were informed that he had several naps during the night, in the intervals of which he had been conscious and had taken nourishment—pulse 65, soft and full—directed an enema of *spts. terebinth.* a tablespoonful, beaten up with the white of an egg, and mixed in a pint of hot water. At 3 P. M. he roused up, complaining of pain and a sense of oppression in the upper part of the chest. I saw him at 4 o'clock, and found it impossible to rouse him—the enema given in the morning had not operated, and a repetition was directed—a blister was also directed to upper part of chest.

3d. There was an unusual flushing of the right cheek this morning—with rigidity of muscles and insensibility to external impressions; the eye balls were more covered by the lids than heretofore, giving to the countenance a more natural appearance; pulse 68; skin warm. The bowels had been freely moved last night by the second injection; discharge involuntary and in the bed. He had been conscious during the greater part of the night; frequently scratched his head, and thrust his finger in his mouth, as a sign

of the distress he felt in his throat: several times during the night he cried audibly and shed tears, and on one occasion the tongue was protruded from the mouth and remained out for two hours: he frequently tried to draw it back but could not: he moaned bitterly during this time, and seemed completely conscious of his situation. He took freely of barley water and soup during the night and early in the morning, taking the cup in his own hand, and swallowing without difficulty. He still refused to take medicine.

5th. Patient cataleptic; lying with his arms folded across the breast; his hands firmly clenching the wrists: so firm was his hold, that it required considerable force to disengage them. He had probably dropped into sleep in this position, and the limbs had been retained in it, from the rigidity of the muscles. He had been unconscious during the preceding day, and last evening gave a deep sigh, after which he threw off the bedclothes and began to suck his thumb as a sign for candy. He partook freely of nourishment and had frequent intervals of consciousness through the night, but became completely cataleptic toward morning.

6th. Eyelids closed; breathing more natural; pulse about 80; skin warm; limbs rigid; bowels constipated. The paroxysm of yesterday was broken about the same time as on the previous evening; consciousness preceded by a deep sigh. Slept, and was conscious by turns during the night; spoke several times distinctly, and at other times could scarcely be understood; drank freely of nutritious drinks, and sucked sugar candy, but refused medicine. Directed enema of spts. terebinth., &c.

7th. Eyelids open; no conjunctival injection or mucous discharge; cheeks slightly flushed; pulse 84 and natural; limbs rigid; injection had operated once freely; passes large quantities of urine in bed. He roused up about 7 o'clock last evening, rather later than on the two previous evenings; remained partially conscious at intervals during the night; took considerable nourishment, but refused medicine; speech inarticulate. In the afternoon of to-day his tongue protruded and was slightly compressed between the teeth; the jaws were forced farther open, and remained so; the tongue moving about constantly. This protrusion of the tongue came on after swallowing, and while the patient was conscious; he appeared much distressed at his inability to draw it back; it continued out for more than an hour, during which time he was unable to articulate or to swallow.

8th. Face flushed, and covered with perspiration; eyelids open, pupils partially dilated; is unable to speak, and appears unconscious. A considerable quantity of colored mucus issues from the mouth, which we suppose is an eructation from the stomach; it is discharged without any apparent effort on the part of the patient, and is of a consistence and in a quantity which precludes the idea of its being a secretion from the salivary glands.

Patient was conscious during last evening and night, and partook freely of nutritious drinks; his articulation was difficult, but he moaned and complained very much, as if in distress. A stimulating enema was directed.

9th. Expression of countenance this morning more natural; on our first entrance, he was moving his hand about the lips, and appeared quite conscious, when requested to put out the tongue, he made the attempt, and partially succeeded; he had been quite sensible since last evening, except when sleeping; the muscles of the arms less rigid; legs still stiff. On attempting to bend the lower limbs, the rigidity of the whole body seemed suddenly to increase, the pupils became more dilated and the features more set, like a person about going into a convulsion. Any further effort was, of course suspended, and we left him completely cataleptic.

10th. In the same condition as on former visit, except that the eyelids are closed as in sleep; pulse and skin nearly natural; had not been roused since yesterday morning.

11th. Found him lying with the eyes open, pupils dilated, face flushed, muscles rigid, and the tongue protruding from the mouth. The muscles which close the jaw appeared at times to be in a state of active spasm, grasping the tongue between the teeth so forcibly, as to repress the circulation, and to cause the protruded portion to assume a purple hue. By grasping the lower jaw between the thumb and fingers, and moving it briskly for a minute or two, I succeeded in fatiguing the muscles so that the spasm was relaxed; the tongue was then pushed in, and the jaws closed; they remained in this condition, and no further protrusion occurred at that time. This distressing condition was induced by swallowing some drink, which was the first which the patient had taken since the evening of the 9th. He was evidently much exhausted. Directed enema, and frictions over the scalp, nape of neck, spine, &c., with opodeldoc.

12th. Lying with his eyes open, limbs rigid, unconscious as usual; was informed by the nurse, that while rubbing him with the opodeldoc last evening, he roused up, with a frightful expression of countenance and a gape, soon after which he asked for drink, passed his urine, &c. He slept at intervals during the night soundly, and at one time, talked distinctly in his sleep, although when roused, he could with difficulty make himself understood. His limbs became more flexible under the frictions. Directed their continuance.

13th. Still cataleptic; had been conscious during a part of the night, and until within an hour of our visit. I applied this morning a folded compress four or five inches long, wet with Granville's lotion, to the upper portion of the spine. It was allowed to remain on, until the skin was reddened, without producing the least apparent effect upon the patient. This article was also applied to the forehead and temples.

Soon after the application, he roused up, and complained of the burning in his back, although he knew nothing of what had been done. He remained quite conscious during the day and evening, and at 11 P. M. closed his eyes and slept. During this long interval, he was more completely roused than he had been for many days. He appeared perfectly aware of his situation, and expressed his ideas freely. He said he felt a difficulty in breathing, and frequently cried out, "I am dying, don't leave me. Don't you see I am dying; I am going, I can't open my eyes, nor get my breath," &c., &c. He complained, too, of his head feeling little, and of "feeling strange and bad all over." He said the doctors could do nothing for him, and that he must die. He reminded his attendants of directions which we had given, when he was in a state of apparent insensibility, and appeared to have had at times a distinct recollection of our visits. On one occasion, this fact was particularly remarkable. Dr. Otto had charged the nurse not to force drink upon him, when he was insensible, for fear of its getting in the windpipe, and strangling him. This direction was given, when he was apparently completely unconscious; and yet, sometime after, when he was roused, and the nurse was urging him to drink more freely than he desired, he reminded her of this direction, and cautioned her not to persevere.

During the present interval, his articulation was more distinct than on former occasions, although still drawling and whining. He used the upper extremities freely, and was raised up in a sitting posture without difficulty. He passed urine several times during the day, and took freely of nutritious

drinks. His tongue gave him great trouble, from a frequent disposition to protrude, but he kept it in by his own hands. He asked frequently for cake, and ate two dried rusks with ease. The cast of his mind and conversation during the day was very similar to that which was peculiar to him for some time previous to his illness. His thoughts were gloomy and melancholic, and he was much disturbed on one occasion, at hearing a loud laugh below stairs, from a belief that the individual was making sport of him.

I visited him between five and six o'clock, P. M., in company with Dr. Kirkbride and Pepper, and found him sufficiently roused to answer questions; his arms and hands much less rigid than heretofore; the expression of his countenance quite natural.

After moving the limbs for a few moments, in order to ascertain their condition, we observed a marked change in the expression of the countenance, and an increasing rigidity in the muscles—and in a few minutes, the patient sank again into the cataleptic state, from which our most strenuous efforts to rouse him proved unavailing. Before we left, the limbs would remain in any position in which they were placed, although when we entered, he was moving his arms freely; pulse feeble, and about 68.

He remained in this condition, until ten P. M., when he closed his eyes, and slept soundly; when I saw him in the morning, he was lying in a state of insensibility, from which I could not rouse him by the application of aqua ammoniac to the nose, pinching, striking, &c. The ammonia produced a temporary redness of the face, and slight wincing, without a return of consciousness.

A stimulating enema was directed. On visiting him in the afternoon, I found him in the same condition; the enema had not operated, nor had he been roused by changing him to another bed. A repetition of the enema was directed.

16th. Still cataleptic; the enema of last night had not roused him, although it had operated well. He remained unconscious until 10 o'clock the following morning, being a period of 64 hours, during which he had taken no nourishment. Notwithstanding this long period of unconsciousness, his pulse and skin continued nearly natural. On first rousing up he made signs for the chamber-pot, and passed a large quantity of urine; he then desired something to eat, and took in a short time three pints of gruel with an evident relish; his articulation was distinct, and his consciousness complete. At 5 P. M. I visited him; found him quite sensible, moving his hand towards his face, he said he felt very bad, although he did not refer his uneasiness to any particular point. My visit seemed to excite him, and I had scarcely left the house, before he relapsed into the same insensible condition in which he continued until 10 o'clock on the following morning. At this time he roused up, asked for food as usual, and conversed with those around him; about noon he became insensible for an hour, and then had another interval of consciousness until evening, when he became cataleptic for another hour; after which he roused up, and conversed freely until midnight. During this interval, he was continually engaged in scratching himself, and was more cheerful than usual; said he was aware of many of my visits, but could not speak to me; he took this evening a purgative of jalap and rhubarb.

19th. Visited the patient in company with my friend Dr. Woodhull of Princeton; found him completely cataleptic; he roused up, however, at 11 o'clock in the morning, and remained sensible until evening, when he dropped into a natural sleep.

During this interval his appearance and conversation were natural; he answered questions correctly, and seemed quite conscious of his situation. I desired him to raise his lower limbs, but he was unable to do it without help, owing to the great stiffness in his limbs; he said he felt "bad all over." He slept comfortably during the night, and roused up at 8 o'clock on the morning of the 20th, without experiencing a paroxysm. I visited him at about nine o'clock, found him sitting up in bed supported by a chair; his countenance was natural, and his muscles less stiff. Dr. Otto called soon after; he answered several of his inquiries, and then relapsed in the same rigid, unconscious condition, as before described; this continued until evening; when he roused up, took nourishment, and remained awake until late bed time, when he fell into a natural sleep.

21st. At my visit this morning, I had an opportunity of observing the manner in which he roused from sleep. He first began to moan and move his hands rapidly across the breast; this was accompanied with a tremulous motion of the eye-lids, which continued for several minutes; he then made signs for drink, by putting his finger to the mouth and pointing towards the mantel piece alternately. On placing a spoonful of gruel between his lips, he at once swallowed it, after which he began to articulate, repeating several times that he wanted something good. The tremor of the eye lids still continued, and it was some minutes before they were opened, and he seemed completely roused.

26th. Since the last date, the patient has been gradually improving, the cataleptic paroxysms are less frequent and profound, seldom continuing over two or three hours; the patient takes food with a relish, and is gaining strength; his spirits are better, and he sits up and converses with those around him; he can use the upper limbs freely, but any attempt to raise the lower extremities causes him considerable pain.

He has been frequently purged with rhubarb and jalap, and the discharges have a healthy aspect. He has also taken 5 drops of oil of amber in mucilage three times daily, for several days past. The pulse is quicker and more feeble than it was during the paroxysms; and he shows a great tendency to inactivity and listlessness. He was directed to continue the powders, and to substitute the tr. assafoetida, a teaspoonful three times daily, for the oil of amber. His relatives were advised to get him out of the chamber, and to interest him in some occupation as early as practicable.

After this date I ceased regular attendance, merely visiting him occasionally; he continued to improve, and was soon able to get down stairs.

In the latter part of the 3d month, (March,) I called, and found him actively engaged at his work in the shop, being in the apparent enjoyment of good health, with the exception of a slight oedematous swelling of one of his limbs. I have not heard of his having been indisposed since that time.

Philadelphia, 6th month, 15th, 1840.

ART. VIII. *Cases of Fever, resembling Dothineritis or the Typhoid Affection, with Remarks.* By JNO. M. B. HARDEN, M. D., of Liberty County, Georgia.

To Broussais is due the merit, "if such there is," of attempting to fix the seat of all idiopathic or essential fevers in the mucous membrane of the alimentary canal* under the general denomination of gastro-enterite, and it was his opinion that all malignant, nervous or ataxic fevers were due to this affection, aggravated to such a degree as that the irritation of the brain incident thereto had arrived at the state of true phlegmasia. M. Bretonneau, however, observing that in an epidemic fever of this latter character the muciparous glands of Peyer & Brunner presented the chief marks of lesion, believed that it was due to an eruption of pustules, and erected it into a new disease under the name of "dothineritis," and M. Trousseau published a memoir upon it in 1826. The researches† of M. Louis upon the subject, published in 1829, the facts of which he tells‡ us he had been collecting between the years 1821 and 1827, have established the anatomical characters of this disease, and it is now beginning to be recognized as a distinct species of fever by some of the most distinguished physicians of Europe and America.

It must have happened to physicians at the south, as it has to me, to meet with cases of fever in their practice, which, although occurring at the same time with our autumnal fevers, could hardly be confounded with them, and which, notwithstanding, could not be regarded as the true typhus§ or synchus of authors, although presenting many symptoms common to them. It is our design in the present paper to offer to the notice of the profession a few examples of such cases. I have never had an opportunity of making a post mortem examination in any case, so that I would speak with distrust and diffidence upon the subject. I have not yet seen a case terminate fatally that I could certainly determine to be one of the kind, and indeed, I treated the disease for a long time without suspecting its character; yet the symptoms presented in the following cases, when I recollect the marked character of the bowel affection in nearly all, impress me with the suspicion, if not the belief, of the identity of the disease with the fever described by M. Louis. Should opportunities be afforded hereafter, I hope to satisfy myself upon the subject.

* Propositions de Médecine 138-9. Examen des doctrines médicales, tome 4, p. 407.

† Recherches Anatomiques, Pathologiques et Thérapeutiques sur la Maladie connue sous les noms de Gastroenterite, &c.

‡ Examen de l'Examen.

§ Dr. Gerhard of Philadelphia considers the typhoid affection or "dothineritis" as identical with typhus mitior. (*Am. Journ. Med. Sciences*, vol. xix, pages 289 et seq.)

I give the cases from notes taken at the time; and although I am well aware that they are in many respects very defective, I prefer to give them nearly exactly as I find them recorded.

Case I. I was called, 23d of July 1836, to a negro girl belonging to W. P. Bowen, ætat. 6 years. She had been taken with fever on the 17th, six days before, which had never left her since. When I saw her she presented the following symptoms: skin hot and dry; pulse 144; unable to answer questions; tongue pale, covered with a whitish fur. She had taken a dose of calomel and castor oil, and had passed a worm by the mouth. Took 3x. blood from her arm, applied a blister over the bowels, left six grs. blue mass to be taken at bed time, and ordered a dose of castor oil in the morning.

25th. Blue mass and oil had acted well, but her fever remains undiminished; pulse varying from 144 to 152. Took 3x. blood from her arm; poultice over abdomen.

26th. No alteration in the case; applied four blisters to her extremities; flaxseed tea in which a minute portion of tart. antim. was dissolved, as constant drink. Left directions that she should be bled again to-morrow if her fever has not abated.

28th. She was bled yesterday as directed, but still I find no alteration; pulse nearly 160. Took about the same quantity of blood from her arm; ordered diluent drinks.

29th. Pulse to-day 160; respiration 52; great throbbing of the carotids. Took from 3x. to 3xii. blood from her arm; ordered diluents, water and flaxseed tea.

31st. To-day I find her much better in every respect, her pulse being down to 125 or 130, and every other symptom mitigated. I left her with directions to continue the same drinks and low diet until the fever left her, and then to take quinine.

I was called again to see her on the 8th of August, her fever having never left her, when I made the following note of her case: She is sitting up; pulse from 135 to 140, and from the obvious *enlargement* of her *abdomen* I think she is suffering under parabsysma of the liver, although my examination was not minute. Vs. 3vij.; ordered two grs. rhubarb ter in die. Under this treatment she gradually recovered entirely. I regret not having been more particular in stating the character of the alvine evacuations, but I am under the impression that the case differs in no material symptom from the others that I shall mention.

Case II. Betty, a negro girl, on the same place, ætat. 18, was taken with fever on the 10th of August, 1836, and I was called to see her on the 15th. Found her in the following state: pulse 112 to 116, full; tongue coated with a whitish fur, red around the edges; pain in the bowels; muscular strength greatly diminished, indisposed to sit up. Vs. 3xij.; gave a solution of tart. antim. in divided doses; ordered an opiate at bed time.

16th. No alteration in the case. Flaxseed tea and small portion of tart. antim. as constant drink.

19th. Muscular strength more diminished; tongue clean and moist; no pain except on pressure of the abdomen. Vs. 3xij.;* applied a blister over the bowels; continue mixture.

* I ought to state that here, as in every case where I mention the quantity of blood drawn, I make an estimate not from actual measurement, but from the capacity of the vessel into which it is received.

25th. I did not see her again until to-day, when she is in the following state: pulse 120, full; extreme muscular debility; subsultus tendinum; complete deafness; great pain on pressure of the abdomen over the epigastric and right hypochondriac regions; constant moaning and motion of body and limbs. *Vs.* *3vi.*; two blisters to thighs. Left a mercurial cathartic and an opiate to be taken after the operation.

27th. The cathartic has operated well and one worm escaped from her mouth, and I learn that she had passed four last week. Pulse 130, full but not tense nor hard; tongue covered with a whitish fur, red around the edges; complains of pains in the bowels, particularly upon pressure; not so much when the pressure is made over the hypochondrium; deafness and tremors not so great; some cough. Ordered a pint of strong infusion of *spigelia Marylandica* at bed time, and a dose of oil in the morning.

29th. She took the pinkroot tea and oil, which brought away one more worm; her pulse is now 125; subsultus and deafness nearly gone; pain in the bowels still continues; tongue as before; complains greatly when pressure is made over the abdomen; skin cool and dry; it is said that she frequently speaks incoherently; thirst. Four blisters to extremities; poultice over bowels; low diet; a dose of oil to be given day after to-morrow if her bowels are not moved without it.

September 1st. Pulse 120, all symptoms better or removed—subsultus and deafness entirely; tongue clean; no pain. Left some powders of sulph. antim. prep.; half gr. to be taken *ter in die*. I did not see her after this. She recovered. The reason of my not seeing her oftener during her illness, was the distance I resided from her. The last prescription I made was a mere placebo, from which I expected no benefit, but I used it here, as in some other instances, for fear it might be supposed that I was doing nothing.

Case III. Sharper, a negro boy, *ætat.* 12, belonging to S. Spencer, was taken sick with fever, about the 14th of June, 1839. A dose of tart. antim. (three grs.) was given, which acted mostly as a cathartic and prostrated him very much. His fever not yielding, I was called to attend him on the 17th. I found him with the following symptoms: Pulse 92 to 98, compressible, drowsiness, tongue coated, eyes yellowish, pains in the bowels increased on pressure, skin perspirable, great debility, loss of muscular strength. Since that time his symptoms have continued obstinately the same, pulse varying from 98 to 104, while his breathing has been very hurried, his tongue has been very dry and glabrous, emaciation has increased, pains in the bowels have continued, and the disposition to coma has been constant. I have used various remedies, such as infusion of *spigelia*, 3 to 5 grs.; blue mass. every night or every other night; bled him three times; blistered his bowels and extremities; kept his bowels soluble and used *sina-pisms* extensively.

29th. He is now labouring under diarrhœa; pulse 100; tongue moist; bowels not so painful. Prescribed powders of calomel, chalk, opium and *ipecac.* combined, *pro re nata*.

30th. Diarrhœa checked; tongue moist and soft; pulse 100; is anxious for something to eat. Spare diet, a few more of the comp. pulv.

July 1st. Has no fever to-day; pulse 89; diarrhœa checked, although it had increased last night; appetite good; he has a little swelling of the jaw, which I attribute to mercury. Diet, any thing in moderation. He has perfectly recovered.

*Case V.** Malvina, a negro girl *ætat.* 12, of good constitution, belonging to Jno. S. Fleming, was attacked with fever on the 6th of July, 1839. She has been actively treated, having taken sixteen grs. of calomel in two doses, large quantity of pinkroot tea, was bled and blistered over the bowels, and was taking, the day I saw her, calomel and ipecac. combined every two hours.

July 18th. Saw her to-day. Pulse 112, full, but easily compressible; countenance dull; comatose, but sensible when aroused; indisposed to answer questions; abdomen soft; skin moist; bowels soluble; tongue foul, moist. Four blisters to her extremities; one gr. tart. antim. and $\mathfrak{z}\text{i}$. carb. sodæ in half pint of water, to be taken in the course of the day; gruel for diet; cold water *ad libitum*.

14th. Passed a pretty comfortable night; was somewhat disturbed by blisters, which drew well; pulse 108; respiration not much disturbed; slight cough; seems to be insensible of surrounding objects; at times speaking deliriously; disposed to sleep; her bladder was very much distended, indicating a partial paralysis of this organ; I was about to draw off the water by a catheter, but she soon passed a *large quantity* unaided; bowels moved thrice to-day; tongue as yesterday. Continue mixture.

15th. Manè. Passed an unpleasant night, moaning as if in pain; bowels moved once during the night; pulse 112, rather full, but not hard; countenance dull; drowsy; unconscious except when aroused, and then only for a moment; tongue as before; abdomen soft; skin soft. Took $\mathfrak{z}\text{x}$ blood from her arm; flaxseed tea in which is dissolved $\mathfrak{z}\text{i}$ carb. sod. to be taken during the day; sinapisms to extremities, which are to be moved from place to place. *Vespere.* Has been restless and moaning all day; pulse 120, feeble; has perspired freely; takes no notice of any thing, but pupils sensible to light. Four more blisters to extremities, and as bowels are distended and have not been moved to-day, gave seven grs. blue mass at bed time.

16th. Manè. Pulse 120, small and feeble; skin cool, dry; respiration irregular, hurried; sputa viscid; tongue moist; bowels distended with air, (meteorism;) chest sounds well on percussion; cough, troublesome, but seems to be voluntarily suppressed, as if the act produces pain; attended with no expectoration; moans and seems distressed; bowels moved once in night; blisters have drawn well. The following mixture to be taken during the day: carb. sod. $\mathfrak{z}\text{i}$; tart. antim. half gr.; teaspoonful of paregoric in a pint of flaxseed tea; emollient poultice over the bowels. *Vespere.* Has been more quiet to-day, but still moans, cough troublesome and suppressed; bowels not moved to-day; pulse 120. Same mixture through the night.

17th. Manè. Pulse 125, rather more full; bowels not having been moved a dose of ol. ricin. was given; skin dry; in other respects no change. Took about $\mathfrak{z}\text{iv}$ blood from arm; same mixture, omitting paregoric, every hour. *Vespere.* Bowels have been moved five times; pulse 116; intelligence better. Continue mixture; $\mathfrak{z}\text{ss}$ paregoric at bed time.

18th. Manè. Passed a good night; had one passage from bowels; pulse 125, rather full; other symptoms as yesterday. Took $\mathfrak{z}\text{viii}$ blood from arm; continue mixture. *Vespere.* Pulse 125; skin wet with sweat; tongue moist; cough troublesome, but not suppressed; bowels moved once to-day; respiration 35, irregular. Continue mixture.

19th. Manè. Pulse 116, rather full; respiration 45, irregular; seems to

* Case IV was a brother of the subject of the preceding case. The course of the disease in both being much the same, we have omitted the details of the second.—Ed.

be intelligent, but will not answer any question, which I attributed to deafness; bowels not moved last night; abdomen tympanitic. Took ℥viii blood from arm; continue mixture. Vespere. Pulse 112; respiration 36 when asleep; a dose of oil given this morning has operated once. Continue mixture.

20th. Bowels rather inactive; she mutters a good deal but unintelligibly, although she seems to be rational; rather deaf; wishes to get out of bed because she says it is too hard for her; I found her on the floor; pulse 116, full; respiration as yesterday. Took ℥x blood from arm; nine grs. blue mass as cathartic; continue mixture.

21st. Spent a very restless night, muttering unintelligibly, and tossed herself about until she was completely exhausted; cough still troublesome; pulse 108, of sufficient volume and force; skin soft; bowels moved thrice since yesterday; respiration hurried; tongue clean; will not answer questions; looks about rationally, but sometimes has a wild stare. Nine grs. blue mass statim; blister over chest; flaxseed tea alone as drink; ℥ss paregoric to-night.

22d. Took last night only half the paregoric prescribed and rested badly, muttering all night in delirium; sensible this morning and fears to be bled; tongue cleaning; bowels not been moved since yesterday; pulse 108; breathing 35; cough very troublesome; abdomen not so tympanitic; skin cool generally; countenance at times wild; blister drawn well. Nine grs. blue mass; flaxseed tea; repeat paregoric to-night; chicken water with the gruel which she has been taking.

23d. Spent a good night; bowels moved four times after having taken a dose of oil; pulse from 96 to 100; respiration equable, 25, easy; tongue foul but moist; is peevish and anxious for something to eat; skin cool; rational. Flaxseed tea and oil if bowels are not moved before evening; chicken water made very salt.

25th. The blue mass (9 grs.) which I gave yesterday morning not having acted during the day, a spoonful of oil was given in the evening, which acted four times during the night. She has perspired profusely; cough troublesome; expectoration defective; pulse 100, equable; breathing easy; she is rational; skin moist and cool; craves for something to eat. Syrup squills, two teaspoonfuls and one of paregoric in half pint of flaxseed tea, ℥ss . every hour. Diet more nourishing. She gradually recovered after this, and is now entirely well.

Case VI. A son of D. Miller, *ætat.* 5 years, was taken with fever, about the 3d of August, 1839, which has never been off since. The principal features of the case have been anorexia; pain in the head; deep red tongue, having little or no fur, but has been of a glazed appearance above and dry most of the time; pulse varying from 104 to 120, mostly feeble; as nearly as I could judge, he has had an increase in his pulse twice a-day, in the morning and at night; a good part of the time his extremities have been cool while his body has been hot; intelligence good, but great drowsiness and speaks out in his sleep incoherently at night; *torpor* of bowels; stools greenish or dark coloured. I treated him with blisters; sinapisms extensively; poultices to bowels; pediluvia; blue mass as a cathartic, as occasion required; bled him once; tart. antim., paregoric and carb. sod. in flaxseed tea as drink.

23d. To-day I made the following note: Pulse 96; skin cool. I tried one-fourth gr. quinine every hour, but in the evening his pulse having risen to 120, and being full, took ℥viij . blood from arm; applied a mustard poultice to abdomen.

24th. Morning. Pulse 104; bowels not moved since day before yesterday; countenance good; tongue not quite so red. Gave 10 grs. blue mass statim. Evening. Pulse 108; blue mass has acted very slightly after the use of an enema. Repeat enema, and put him in warm bath to-night—if he is restless give a few doses of the following mixture: Tart. antim., paregoric and carb. sod., in flaxseed tea.

25th. Pulse 112; skin cool; tongue has lost its fiery redness and is clean; disposed to swell in the face. One-fourth gr. quinine every hour.

26th. Pulse from 96 to 100; looks well. Continue quinine.

27th. Bowels still torpid; fever continues, but his appetite is good and he is apparently better. 7 grs. calomel to-night.

28th. Pulse 120; skin moist. Continue quinine.

31st. Getting better, although he has fever occasionally. He gradually recovered and is now quite well.

Although this case is not so marked in many of its symptoms as some of the others, yet I must regard it as a mild case of the same fever. It differs in its type, progress and duration, from our autumnal fevers. I could never discover any regular remissions and exacerbations which mark the course of the remittent fever, with double tertian type, which is the most common form of fever with us. They usually, also, come to their crisis, in from 7 to 11 days; whereas, in this case there seemed to be no material modification for 21 days, and I believe it was over 30 days before it left him entirely.*

Case VII. Ben, a negro boy, aged between 8 and 10 years, belonging to J. S. Fleming, was taken with fever, about the 15th of August, 1839, accompanied with pain in the head and epigastric region, and diarrhoea. I saw him on the 20th of August. He had been bled twice or three times, and had taken various medicines. I gave him at first an emetic, and bled him again, on the 22d and 24th. He was extensively blistered. His fever still continued, with diarrhoea and distension of bowels. I ought to remark that the diarrhoea came on after the fever, and was accompanied from the first by distension. His pulse varied from 112 to 120, never very full nor hard. I left him on the 27th, but not getting better. I was called to him again, on the 3d of September. His pulse was 120, easily compressible; skin dry and harsh. I gave him rhubarb combined with chalk, in small portions, three or four times a-day.

September 4th. Pulse 108; skin cool; tongue moist; abdomen very sore from blisters, and rather *retracted*; had five passages from his bowels since yesterday, some involuntary in bed; countenance good; mutters in his sleep. Continue pulv. paregoric, at bed time.

5th. Pulse 100; blister on abdomen very sore; skin cool and moist; bowels loose. One powder of rhubarb and chalk, every four hours.

6th. Had three passages to-day from bowels; slept pretty comfortably last night; pulse 108; skin warm; appetite good. Continue powders.

8th. Pulse 104, full; bowels moved four times during the last 24 hours; skin cool and moist; emaciation. Took ʒvi. to ʒviij. blood from arm. Continue powders.

28th. Since last report I have not seen him, and he was thought to be recovering, although his fever still continued; his bowels have never been

* It is true that our remittent fevers sometimes assume a kind of chronic form, yet I have never known a case of *true remittent* among us to which, from its commencement, as in this, the designation "*febris lenta*" of older authors, could be strictly applied.

relieved; night before last the diarrhoea returned with violence, and I was called to him again to-day. Find him extremely emaciated, with constant diarrhoea; fever high; pulse 120 to 130; pain on pressure over abdomen and hypochondriac regions; tongue clean, except around the edges, which are covered with a white albuminous coat of thick consistence, the rest of it of a deep red; passages sometimes natural, sometimes watery. Quinine and wine in morning, but discontinued them in evening, and gave a dose of sulph. morphia.

29th. Pulse 108; skin cool; countenance good; tongue clean, red; passages very green, not quite so frequent. One of the following pills, ter in die, washed down with half a wineglass full of wine, extract. taraxici, grs. 48; protochlor. hydrarg., grs. 6. Mix and divide into 24 pills. Soon after this he began to improve. I saw him for the last time, on the 8th of October; he was sitting up, and walked with assistance; his digestion was bad. I prescribed half gr. quinine and 10 grs. soda, in wine, three times a-day, and moderate diet.

This case bears some little resemblance to acute hepatitis; but the early appearance and persistency of diarrhoea with the meteorism of the abdomen seems to point clearly to the *bowels* as the seat of the disease, there is no doubt that during the last days of the fever the function of the liver was disturbed, but it is not to be wondered at in a disease of so long continuance, even supposing that organ to have been perfectly healthy in the commencement. His intellectual faculties were never greatly disturbed.

REMARKS.—1. *Symptoms*.—The state of the skin was very variable, even in the same case; its temperature did not seem to bear any definite relation to the state of the circulation, sometimes being low while the pulse was high, passing from dryness to moisture in a short time, without any diminution of fever. I have never observed any eruption; the most of the cases being of negroes, it could not have been readily detected, and a particular examination for it was not made.

The head was affected in all; in some more than in others; coma or great drowsiness was found in all, during the first days of the fever, although all seemed intelligent when aroused, except one or two, and I did not know whether to attribute their conduct to deafness or loss of intellect; delirium common, particularly at night; deafness was observed in three; subsultus strongly marked in one only. The chest seemed to be affected in one; in all respiration more or less hurried. The appearance of the tongue variable, most commonly deep red, particularly around the edges, and covered with a white or brown fur, in most dry, and in one or two glazed. In all, the abdomen seemed to be affected with pain, particularly upon pressure. In one only were the bowels *torpid** throughout, in the others there was either diarrhoea, or such a disposition to it as seemed to forbid the use of cathartics in general, except of the mildest class, and they were treated mostly by diluents. Meteorism was marked in a few, and I believe it was more general than I have noted it; I think I have seen it in at least five of the seven. The liver

* Constipation is not incompatible with inflammation of mucous membrane of small intestines. Vide Broussais, *Propositions de Médecine*, 133.

was apparently affected in one. The circulation was very rapid only in our first case. Muscular strength diminished in all; in one or two remarkably so. Duration from three to six weeks. It will be seen that they were all young, the oldest being about 20 years of age.

2. *Treatment*.—In order to know the value of any remedy or course of remedies, we should know what modification they have impressed upon the disease which we treat, and in order to this it appears to me it is essential to know what would be the course and termination of the disease if left to itself. It seems to be taken for granted by some physicians that in all diseases all the cases to which they may be called would terminate fatally if some medicine were not given, or some other remedy used; whereas the fact is, that a majority of our acute diseases and many of the chronic, if left to nature, with proper dietetic regimen, would terminate favourably—and there are many cases, bad in themselves, and treated badly by the physician or quack, which nevertheless do terminate in this way.* Hence we find that every physician, after a little practice, is able to give a number of successful cases as living witnesses of the power of some remedy or course of treatment. Now although all the above cases have terminated favourably, I do not know enough of the disease to pronounce with certainty how far it was modified or ameliorated in any case by remedies. They were all treated upon general principles and the remedies used as indications seemed to present themselves, and all that I have learned from them myself or can suggest to others is contained in the following remark of the illustrious Boerhaave: "I cannot admit that any other qualification doth recommend or raise the price of one medicine (or remedy) above another but the proportion wherein each is more properly, seasonably or prudently applied according to, all the peculiar circumstances both of the patient and the disease."†

Liberty county, Geo., April 3d, 1840.

ART. IX.—*Case of Calculus in the Bladder—Lithotomy—Death.* By THOS. F. BURTON, M.D., of Germantown, Pa.

ON the 2d day of May of the present year, Mr. W. R. placed himself under my care, to be treated for stone in the bladder.

* "Siquidem in morbis cum multum fortuna conferat, eademque, sæpe salutaria, sæpe vana sint; potest dubitari, secunda valetudo medicinæ, an corporis beneficio contigerit. In iis quoque, in quibus medicamentis maxime nitimur, quamvis profectus evidentior est, tamen sanitatem et per hæc frustra quæri et sine his reddi sæpe manifestum est: sicut in oculis quoque deprehendi potest; qui a medicis diu curati sine his interdum sanescunt." *Celsi Medicin. lib. 7, Præf.*

† Preface to his "Aphorisms," published in London, 1742.

The patient was 64 years of age, and possessed of an excellent constitution: for some years previously his habits had been rather free, but at the time of his application to me he was, saving the paroxysms of the disease, enjoying apparently good health. Having satisfied myself of the existence of a calculus, and finding no unnatural enlargement of the prostate gland, (for his age,) all his functions being regularly performed, and no circumstance existing to contraindicate the operation, lithotomy was recommended, as the supposed large size of the stone appeared to afford but little chance for lithotripsy. After having explained to him the dangers of the operation, and placed the matter before him in its true light, he resolved to submit himself to it, and was accordingly subjected to such regimen as is directed in similar cases, for the space of two weeks.

The opinion formed concerning the calculus was, that it was large, hard, solitary, and of an ovoidal figure. It had existed for several years.

Sunday, the 17th of May, was the day selected for the performance of the operation; and, assisted by Drs. Norris and Goddard of Philadelphia, and in presence of Drs. Smith of Chestnut Hill, Hiram and Wm. Corson, and Poulke of Plymouth, and several medical friends, I proceeded to its accomplishment. The staff was introduced and the patient secured in the usual manner, the stone felt, the staff given to the hand of Dr. Norris. The first incisions were made and the bladder opened with the gorget, as directed in the lateral operation. No undue or unusual loss of blood occurred. The bladder contained very little fluid. After having seized the stone and endeavoured to extract it, we found that it resisted all our efforts, both from its great size and the firmness with which it was clasped by the bladder. The forceps were then committed to the skill of Drs. Norris and Goddard, who with myself were unable to advance the progress of the calculus. We then attempted to break it by means of Jacobson's brise pierre, but found it too large to be included in the jaws of that instrument. Heurteloup's brise pierre was next tried with no better success, and only with the brise pierre à percussion, sent by Weiss of London, and much too large to enter any ordinary urethra, were we enabled to break off a small fragment, about one-sixth of the whole stone. Its excessive hardness resisted any warrantable degree of force. In this distressing state of things, warned by the length of time necessarily consumed, and the threatening exhaustion of the patient, we resolved to abandon the attempt, as we did not feel justified in proceeding further. He was therefore unbound, put to bed, stimuli freely administered, and watched, as may be supposed, with the most anxious care. Our hopes were vain; he rallied slightly, remained rational and collected, and in about five hours from the commencement of the operation, expired.

Autopsy, 18 hours after death. The bladder was quite free from disease, as also the cellular membrane surrounding it. The wound looked well, and the section of the prostate was found to have been satisfactorily made, pre-

sending no appearance of laceration or bruising. The kidneys were highly diseased: they were much diminished in size, and their structure converted into a whitish substance of firm consistence, and contained several small cavities, apparently enlarged infundibula. The ureters were much enlarged, so as to admit easily a swan quill. The rest of the organs were healthy. The weight and size, as well as the analysis of the calculus, which has been kindly promised to me by my friend, Professor Booth, will be given in the next number of this Journal.

Melancholy as was the termination of the above case, it is not without many precedents, both in this country and in Europe, and I have considered it my duty to the profession of which I constitute but a humble part, to make it public. Successful cases are of every day occurrence, and scarcely worthy, unless something unusual attends their performance, of public mention. Fatal cases are much more instructive, and if less gratifying, it is not the less our bounden obligation to send them forth, that they may serve as beacons for others. With these feelings I venture to commit it to the candid scrutiny of my medical brethren.

Germantown, Pa., June 29, 1840.

ART. X.—*Case of Strangulated Hernia, complicated by the presence of the Testicle in the Abdominal Canal.* By PAUL F. EVE, M. D., Professor of Surgery in the Med. Col. of Georgia.

A few days since I was requested to see a patient under the care of two of my professional friends, twenty miles from this city, labouring under strangulated hernia.

When I arrived, the following history of the case was furnished, embracing a peculiarity which may be deemed worthy of notice by the profession:—Simond, a negro, *stat.* about 28, good constitution, robust health, has been married some time, the father of children, the right testicle has not descended into the scrotum. While ploughing in a rough piece of ground on Friday, the 17th of April, he was struck across the abdomen by the cross bar connecting the handles of the plough, that implement having been suddenly arrested by an obstacle in the earth. Early the next day his bowels were evacuated, and at 12 o'clock M. he laid down and complained of severe pain in the abdomen, which was supposed to result from an attack of colic. The usual domestic remedies failing to relieve him, Dr. A. saw the patient in the evening. From his intimacy in the family the Dr. had long been aware of the situation of the right testicle in the inguinal region, and therefore his attention was not fixed upon the tumour in the groin, in making out the

diagnosis of the case. Purgatives, as croton oil, &c., opiates, cupping and blistering affording no relief, and the obstinate constipation still continuing. Dr. B. was sent for and arrived at 3 o'clock A. M., Monday the 20th. The tobacco injection was now administered, and the third portion being retained, its full impression was soon made upon the system. The tympanic state of the abdomen subsided and the distressing symptoms were alleviated, and as the swelling in the right inguinal region was diminished, upon feeling it the gurgling sensation of the intestines was perceived. It was at this juncture that I was sent for, and arrived at 5½ o'clock in the evening.

I found our patient very restless, with great thirst, considerable distension of abdomen, but more especially of a large tumour in the right groin, which was indeed very tense, soreness over the whole peritoneum, irritable stomach with occasional vomitings, bowels not yet opened, and great complaint at further attempts of reduction by taxis; but his pulse was pretty good, intellect clear, and he was willing to submit to any thing promising relief.

Having decided upon operating, after proper preparation the usual incision was made over the hernial tumour, when the dissection had to be prosecuted with great caution, in order to avoid not only the intestine but also the testicle and its cord. So great was the distension of the parts, that it was impossible to distinguish one from the other, or whether the latter organ with its appendage was contained in the hernial sac. It was deemed prudent to divide the stricture in this case without the sac or over the internal abdominal ring, as has been recommended by Sir A. Cooper, to obviate, if possible, aggravating the existing peritoneal inflammation. By this operation the intestine became flaccid, but still could not be returned into the abdomen. The hernial sac was now opened, when the serum flowed out of so dark a colour as to have been mistaken for venous blood. The finger was introduced up to the internal ring, passing the testicle, which was on the outer or iliac side of the bowel, and before reducing this latter, it was found necessary to break up with the point of the finger, the attachments made by the adhesive inflammation all around the neck of the sac. The operation was performed fifty-four hours after symptoms of strangulation commenced. The quantity of intestine down was a loop of about eight or ten inches. The testicle was properly formed, though small for the adult, which was also the case with the left one in its natural situation in the scrotum. Its epididymis was well developed, with a cord apparently of sufficient length for the testicle to have reached its natural location.

Our patient had, during the night after the operation, four free evacuations from the bowels, but the peritonitis continued, and was no doubt aggravated by the dernier resort of the surgeon. He died the next day at 7 o'clock.

Augusta, May, 1840.

MONOGRAPH.

ART. XI. *Observations on the Operative Procedures employed for the Relief of Procidentia Uteri; with Cases, in which this displacement was remedied by suture of the external labia, (episiography.*)* By E. GEDDINGS, M. D., Prof. of Pathology and Medical Jurisprudence in the Medical College of the State of South Carolina.

THERE are, perhaps, few infirmities incidental to the female sex more distressing in their nature than that degree of prolapsus uteri in which the organ protrudes through the outlet of the vagina and occupies the space between the thighs. To this condition the term *procidentia* has been applied, to distinguish it from a slighter displacement, in which the uterus only descends into the cavity of the vagina, without protruding externally.

Procidentia takes place in different degrees, and gives rise to changes in the associated organs, which vary considerably according to the degree of displacement, its duration, and other circumstances. In the first, or slightest degree, the os tincæ and cervix uteri are alone perceptible externally, the body of the uterus being still retained within. In this form of the disease the upper part of the vagina, where it surrounds the neck of the uterus, is inverted to a limited extent, and carried down with the portion of the prolapsed organ with which it is connected. The uterus can generally be replaced without difficulty, and the prolapsus in most cases can be remedied by rest in the recumbent posture, astringent injections, and the ordinary mechanical support of pessaries, &c.

When the procidentia is complete, the entire body of the uterus protrudes through the os externum, and as the vagina is inverted in its whole length and invests the full extent of the uterus, except the os tincæ and a small portion of the neck, the protruded organs thus disposed form a large pyriform or ovoid tumour, hanging, as it were, pendulous from the external parts, and descending for some distance between the thighs.

In most cases of this kind the procidentia can be easily reduced; indeed it not unfrequently returns spontaneously, when the female is in a recumbent posture, but protrudes again as soon as she stands erect, or attempts to walk. In process of time the mucous membrane of the inverted vagina and the exposed portion of the uterus become dry, scabrous, thickened, and indurated; it is traversed at various points by cracks and fissures, which bleed when irritated; and the pressure of the protruded organ against the adjacent portion of the thighs, together with the friction which is exercised between these surfaces whenever the individual attempts to walk, give rise to extensive excoriations, finally ending in deep ulcerations, which occasion great distress. In some cases, moreover, of protracted duration, in con-

* From *intra*, external labia, and *epi*, suture.

sequence of long continued congestion of the parts, the protruded organs become so much enlarged and indurated as to render it difficult or impossible to replace them; and even when they can be reduced, it unfortunately too often happens that all the usual mechanical means of support fail to retain them in their proper situation, and the unfortunate patient is doomed to drag out a miserable existence, disqualified for the offices and enjoyments of life, a prey to perpetual suffering, and an object of disgust to herself and those about her. Such being the case, it becomes an important point to determine how far operative surgery is capable of affording any means of relief, and to ascertain, as far as possible, which, amongst the few resources it has as yet offered, is best suited to the fulfilment of the important object to be obtained in the treatment of this deplorable accident.

In the few observations which follow, I shall avoid all discussions relative to the use of pessaries; for although sometimes useful, and in some instances entirely successful, my own experience has fully confirmed that of most others, that in very many cases they altogether fail to afford the slightest relief. As I propose to confine myself entirely to the operative procedures which have been employed in such cases, I shall, for this reason, make no further mention of Hull's utero-abdominal supporter, Prof. Hamilton's and Mr. Waller's wire truss, and the ingenious instrument devised by Dr. Annan of Baltimore, than to remark, that, although each of them is highly useful in a certain class of cases, there are many others in which, like pessaries, they are all totally inadequate to relieve the infirmity.

The operations which offer the fairest promise of success are: 1. The Cautery; and 2. The Knife and Suture. I shall speak of these procedures separately, and endeavour to make a fair appreciation of the advantages and disadvantages of each.

1. *The Cautery*.—The indication to be fulfilled by the cautery in procidentia uteri is, to remove the relaxation and consequent distension of the walls of the vagina by establishing extensive cicatrices, which by their contraction may produce so much narrowing of the canal as to present a barrier of sufficient strength to prevent the subsequent protrusion of the uterus. The same principle was long ago applied by Mr. Hey of Leeds, to the treatment of prolapsus ani; and the operation predicated upon it. The excision of a fold of the mucous membrane of the anus has been so strongly inculcated by Dupuytren, that it may now be regarded as the established practice in that affection. Considering the analogy between prolapsus ani and prolapsus uteri, in some of their pathological characters, it is somewhat surprising that principles found so advantageous in their application to the former should not have been long since applied to the latter infirmity. So far as I have been able to ascertain, it is only within a comparatively recent period that the proposition originated, to treat prolapsus uteri by instituting surgical means to promote contraction of the vagina and intimate adhesions between its parietes and the surrounding parts. With whom the suggestion first originated it is difficult to determine, as priority is claimed both by the French and English. It appears from the reports of the *Académie Royale de Médecine* for August 11th, 1835, that M. Girardin, as early as 1822, proposed excision of the vagina as a means of effecting a radical cure of prolapsus uteri. The proposition, however, seems to have found no favour at the time, and was suffered to fall into oblivion, until on the recommendation of Marshall Hall, it was

successfully performed by Heming, an account of whose case was published in the *London Medical Gazette*, vol. ix, Nov. 1831.

The correctness of the principle being thus established, others did not hesitate to avail themselves of its advantages in the treatment of an infirmity which had previously baffled their best directed endeavours. Some were induced to try the cautery as a substitute for the knife, and if their reports are to be credited, the results have been such as to awaken a high degree of confidence in this method of treatment. Who was the first to institute this procedure I have been unable to determine. In the report of the proceedings of the Académie Royale de Médecine for the 25th of August, 1835, it is stated that a communication was received from M. Laugier, representing that he had employed, successfully, cauterization of the vagina with red hot iron, as a means of obviating the descent of the uterus, and that there was at that time remaining in the Hospital Necker, a female recently cured by that process. In a clinical lecture by Velpeau, referred to by Heming, but which I have been unable to find in the number of the *Journal Hebdomadaire* cited by that gentleman, it is also stated that "M. Laugier cauterized a broad strip of the mucous membrane with the nitrate of mercury."^{*}

In judging the question of priority, this date must be compared with the following observation of Evory Kennedy of Dublin, extracted from a letter addressed to Sir Benjamin Brodie.† I am induced to give this extract for the additional reason, that it furnishes the most satisfactory account of the method of using the *actual cautery* in the treatment of prolapsus uteri.

Dr. K. observes, "It is now several years since it occurred to me that caustics might be safely used for the cure of this distressing complaint, and that thus the objects sought by the ingenious operation of Dr. M. Hall, might be arrived at in a simpler, less painful, and more effectual manner. I consequently put it to the test in the part of our institution appropriated to diseases of females, and also in private practice. After trying acids, caustics, and the actual cautery, the results proved the actual cautery to be infinitely preferable to the other caustics. This, indeed, might have been anticipated, when we reflect that the object was the producing the maximum degree of contraction by cicatrization. It also at once relieved us from the embarrassment which you foresee, and which I, in practice, found it difficult to guard against, in the use of acids, as its action was limited to the exact parts required. In fact, the comparative success of the cautery is so much greater, that I now use it almost exclusively, when I esteem it that any advantage is to be gained by operation. I do not, however, as might be supposed by Dr. Burns's observations, limit the application of the cautery‡ to the external opening of the vagina, but apply it also high up, taking in more or less of the circumference of the canal, and producing an eschar varying in extent, according to the degree of relaxation. The operation is very easily performed, and strange as it may appear, is attended with comparatively little suffering, the severe pain being only momentary. The vagina is held open by metal spatulæ, and

* Heming, *London Med. Gazette*, Nov. 1835, p. 267.

† *Lancet*, p. 401, June 8, 1839.

‡ "Burns's note in page 143, in addenda to his edition of 1837. It must have been my operation Dr. B. alludes to, as he saw some of the cases under treatment with me immediately before publishing his last edition, and I am not aware of its having been previously used."

its walls, principally the lateral and posterior (the course of the urethral canal being carefully avoided) steadily touched with a cylindrical iron (set a white heat) about an inch and a half long and five lines in diameter, after which, a dossit of lint, well soaked in oil, is introduced. It may be necessary, in obstinate cases, to repeat the operation. I may mention that Mr. A. Colles, who has also been using the cautery here in prolapsus, prefers making a ring eschar all round, high up in the vagina. In a case which I have been treating within the last few days, along with Sir Philip Cramp-ton, he suggested and practised a very simple and ingenious method in its application, viz: the introducing Weiss's three-bladed speculum, dilating the blades to about one-half, guarding the os uteri by the introduction of a piece of sponge, and then pushing up the cauterizing iron, which came in contact with those portions of the mucous membrane only that protruded through the blades. As yet I cannot say whether this plan is equally or more efficacious than that previously adopted, but it certainly possesses the merit of simplicity."

As Dr. Kennedy, in the above communication, has made no reference to the date of his first operation, we are left in ignorance whether he had performed it prior to August, 1835, the date of M. Laugier's report to the Academy. While, therefore, the general principles of the operation had been proposed and acted upon long before, I have not been able to find in the documents at present before me, any earlier account of the employment of the actual cautery in the treatment of prolapsus uteri, although success had been repeatedly obtained by the employment of the knife for the fulfilment of the same indication.

Not less difficulty exists in determining the question of priority in relation to the introduction of the use of nitric acid, lunar caustic, the acid nitrate of mercury, and other caustics for the same purpose. It has been stated above, that M. Laugier cauterized a strip of the mucous membrane of the vagina, and we are informed by Dr. Kennedy, in his communication already quoted, that besides the actual cautery, he had employed acids and caustics, but found them inferior to the hot iron. But the same absence of dates here, as in the preceding instance, renders it impossible to decide whether these attempts were anterior to those of M. Laugier, or made at a later period.

In the *London Medical Gazette*, 29th of June, 1839, a very interesting case is reported by Mr. Benjamin Phillips, in which the fuming nitric acid was successfully employed, after the displacement had resisted pessaries, the horizontal posture, and even free cauterization of the mucous membrane of the vagina with the nitrate of silver. After failing with the nitrate, which was applied by first introducing into the vagina Weiss's three pronged speculum, and separating the blades, and then freely cauterizing the mucous membrane to the extent of half an inch in breadth, along two of the spaces presented by the expanded blades, Mr. Phillips informs us, he "then resorted to another caustic, from which more energetic effects might be expected. With the same precautions that were used in applying the nitrate, he used the fuming nitric acid, brushing it over a large surface by means of a camel-hair pencil. The pain it occasioned was greater than that which followed the use of the nitrate, but still it was not severe, nor long continued. The inflammatory action was much more decided, the whole thickness of the mucous tissue sloughed, and a fair granulating surface, yielding a considerable purulent secretion, was established."

For some time the uterus manifested little tendency to descend, which it did, however, at the end of the month when the patient got up and walked about, but not with the same facility as before. Her situation not being sensibly ameliorated at the end of another month, the patient became dissatisfied, and left the hospital.

This operation was performed in the winter of 1837, and the individual was not again seen by Mr. Phillips until some time in 1839, when he ascertained, that from the time of her leaving the hospital, the disposition to displacement of the uterus gradually lessened, and, for eight months preceding, had entirely ceased. It was now found, on examination, that the capacity of the vagina was very materially lessened; that from having been, when first seen, unusually capacious, it was reduced to the size of that of a woman who has not borne children.

In a second case, similar in most respects, the same treatment was instituted by Mr. Phillips; but as the patient was lost sight of, the result of the operation could not be ascertained.*

From the foregoing statement it will be seen, that whether the means employed be the cauterizing iron, the nitric acid, nitrate of silver, or the acid nitrate of mercury, the object proposed is the same—the production of a sufficient degree of narrowing of the vagina by the contraction and rigidity of the cicatrices occasioned by the application of the remedy, to obviate the subsequent descent of the uterus. I shall reserve the remarks I have to make in relation to these procedures, until I have described another method of fulfilling the same indication.

2. *Operation with the Knife and Suture.*—There are two methods of operating with the knife, each of which has been successfully instituted. In the one, a portion of the mucous membrane lining the vagina is dissected away, the edges of the denuded surface being afterwards brought in apposition by sutures. The other consists of the removal of a slice from the surface of each labium, and the subsequent approximation of these parts by the requisite number of stitches. The first operation was, I believe, originally proposed by Marshall Hall, and practised, at his suggestion, by Heming. The second was first instituted by Fricke, of Hamburg. It will be necessary to describe the two procedures separately, as they differ in several particulars.

(a.) *M. Hall's Operation—Kolporaphy—Elytroraphy.* This operation seems to have been performed, for the first time, in 1831—at least this is the date of the report of Heming's case,† which, as mentioned above, was performed by that gentleman, at the suggestion of Marshall Hall. It seems, however, from the following remarks made by Velpeau, that the same operation had been repeatedly performed by Professor Dieffenbach, of Berlin, at the same early date. "In 1831," says he, "many of our young surgeons went into Poland, and they addressed letters to the *Gazette Médicale*, in which they give an account of many cases of procidentia uteri, in which there had been performed an operation similar to that adopted by Dupuytren for prolapsus ani;"‡—and in a subsequent communication on the subject, made by Dieffenbach himself,§ besides severe cases of prolapsus uteri, associated with mortification of the vagina, six of which

* Lond. Med. Gazette, p. 494, June, 1839.

† Lond. Med. Gazette, vol. ix, p. 269.

‡ Lond. Med. Gazette, 267, Nov. 1835.

§ Medicinische Zeitung, No. 31, 1836, and Amer. Journ. Med. Sc. Aug. 1837, p. 509.

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were radically cured by the cicatrization resulting from this accident, he mentions that he had had frequent opportunities of performing the operation of dissecting away slips of the mucous membrane of the vagina, and approximating the parts by suture. The operation was also suggested about the same time by Mende,* who, however, never put it in practice. He proposed two methods of closing the vagina by suture: 1. in the natural situation of the hymen; (*hymenoraphy*), and 2. immediately below where the uterus unites with the vagina, (*kolporaphy*), using the precaution in both cases to leave sufficient space to give exit to the menstrual flux. In 1834, Ireland† succeeded in effectually curing a house-maid, aged 50, by the same procedure, and since that period the operation has been performed with complete success by Velpeau,‡ Berard,§ and Bellini.||

Berard has proposed to apply the term *elytroraphy*¶ to the operation. It is mentioned in a report contained in the *Gazette Médicale*, that he had performed the operation on four individuals, two of whom were cured, while in the other two the prolapsus returned. It is stated, however, in the same periodical, for the succeeding month, (September,) that in the case reported by Berard to the *Académie Royale de Médecine* as successful, the prolapsus was subsequently removed—thus leaving only one case out of four, and this one doubtful. Marshall Hall's case, however, was examined by Mr. Vincent of St. Bartholomew's Hospital, two years after the operation, and the uterus and bladder were found perfectly supported in their proper situation.**

The operation has been subjected to various modifications, according to the views of the practitioner and the character of the cases operated on. In Marshall Hall's case, a strip of the mucous membrane, an inch and a half wide, was removed from the anterior part of the tumour, after which the edges were brought together by suture. Ireland dissected a slip of the mucous membrane of the lateral portion of the vagina, about an inch and a half wide, extending the whole length of the tumour, from the os uteri to the os externum. The incisions were nearly parallel, except near their commencement and termination, where they suddenly converged. The sides of the wound were brought together by four points of interrupted suture, and the uterus was readily returned by moderate pressure. In Professor Dieffenbach's first operation, after having emptied the rectum and bladder, a portion of mucous membrane, resembling in size and shape the section of a hen's egg, was removed from the left side of the vagina. The small end of this slip was directed backwards, the large forward, touching the nymphæ. A similar excision was then practised on the opposite side, after which five strong stitches were placed on either side, in the following manner: the two posterior stitches on each side were first applied; the uterus was then returned to its natural position, and the rest of the sutures were finished. In his subsequent operations he applied only two or three ligatures—sometimes none; and in some instances, after replacing the uterus, a fold of the mucous membrane was drawn forward with Muzeaux's forceps, and cut away with curved scissors. He never

* Mende, *Die Geschlechtskrankheiten des Weibes*, 1834, Th. ii, p. 51.

† *Dublin Journal*, vol. vi, p. 484, 1835.

‡ *Encyclographie des Sciences Médicales*, Sept. 1835.

§ *Gazette Médicale*, Aout, 1835.

|| *Bulletine delle Scienze Med.* Jan. 1836.

¶ *avulsion*, vagina, and *causa*, suture.

** Ireland, *Dublin Journ.* vi, 485.

used sutures after this last operation. The method proposed by Velpeau is similar to that of Dieffenbach, except that he also removes a slip from the anterior wall of the vagina.

(b.) *Fricke's Operation, (Episioraphy.)* This important operation, for which surgical science is indebted to Fricke, of Hamburg, was first performed by him on the third of March, 1832. His patient was a maid-servant, aged 28 years. By the 16th of March, the wound had entirely healed, except a small extent in the vicinity of the frenum, which remained permanently open. Union, however, took place to a sufficient extent to prevent the uterus from descending, and the patient, well pleased with her situation, left the hospital to be married!

As Fricke was the first to perform the operation of episioraphy, and may indeed be considered its originator, I shall first describe his method of procedure, afterwards pointing out such modifications of it as my own experience has suggested.

The patient is to be placed in the same position as for lithotomy, but the feet and hands need not be secured. The operator, having seized one labium, inserts a sharp pointed bistoury, about two finger's breadth from the upper commissure, and a full finger's breadth from the margin of the labium. The knife, having transixed the part, is carried downwards to the frenum, so as to terminate the incision with a slight curve inwards, and cut loose a slip of the labium a finger's breadth in thickness. The excised portion has its upper attachment severed, by an incision carried obliquely upwards and inwards. A similar slip is next removed by the same procedure, from the opposite labium. Care should be taken not to remove too much skin—merely a finger's breadth from each labium, and the incisions should be so directed, that while they include a portion of the frenum, they should unite at an angle, about a finger's breadth behind this point.

The hæmorrhage being arrested by torsion of the larger vessels, and sponging with cold water, the labia are to be brought in apposition, by means of sutures in the ordinary way. Previously to doing this, however, the operator should be careful to observe, whether the uterus and vagina, when left to themselves will retain their proper situation. Should this not be the case, before the sutures are inserted, a piece of sponge, previously dipped in oil, and having a thread drawn through it, must be introduced into the vagina, to prevent the uterus from descending. The denuded labia are then to be brought in contact by ten or twelve sutures, commencing at the frenum. In order that the healing process may not be interrupted by the contact of the urine, it is advisable to draw off this fluid for a few days, by means of the catheter.*

In the instances in which I have had occasion to perform this operation, I have departed, in some particulars, from the method prescribed by Fricke, and I have reason to believe, with advantage. In order to promote narrowing of the vagina, upon the principle that all cicatrized surfaces have a tendency to contract, I have, in every case, in excising the labia, dissected a slip of mucous membrane from the lateral walls of the vagina, of an inch and a half in breadth, and about two inches in length—

* Fricke. *Annalen der Chirurgischen Abtheilung des Allgemein Krankenhauses im Hamburg.* Bd. II, p. 142. 1833.

thus combining in one operation, the principles of episioraphy and kolporaphy. By so doing, I conceive that when cicatrization has taken place, the vagina is rendered more rigid, and thus contributes to keep the uterus from pressing with as much force upon the barrier formed by the union of the labia, as it would otherwise do. I have never found it necessary to insert more than five sutures. Fricke, it will be observed, recommends from ten to twelve. So great a number is altogether unnecessary, and could not fail to prove mischievous, by exciting so much irritation as to interfere with union by the first intention. In his case, the sutures were not removed until the thirteenth day, in none of mine were they suffered to remain beyond the sixth, sufficient union having taken place by that time, in some of the cases by the fourth or fifth, to admit of their being removed. My rule has been, as soon as adequate adhesion has been established, to remove one or two of the middle sutures, and if I find the parts adhere with sufficient firmness, to remove the others at the next dressing. Fricke recommends the interrupted suture. I have, for reasons which I consider sufficiently obvious, preferred the quilled suture. As regards the withdrawal of the urine by the catheter, his directions are judicious; but I have not had occasion to resort to the instrument. In my first operation, a catheter was left in the bladder during the first twelve hours, but as the urine constantly trickled by its side, it was withdrawn, and was not used afterwards.

Whatever operation be adopted, whether by the cautery, the caustic, or the knife, it is equally important to attend carefully to the after treatment. As a dressing nothing more is necessary than a soft compress, properly secured by a T bandage. A pledget of lint spread with cerate, may be applied to the part, over which the compress should be placed. The extremities should be bound together by two bandages—one passing round the thighs, the other around the ankles. It is essential to keep the patient confined to the horizontal posture, either on the back, or side, and not to allow her to rise, either to pass urine or fæces. Advantage will be derived from keeping the dressings constantly wet with cold water; and the patient should be cautioned against making any strong effort in expelling the contents of either the bladder or rectum.

There is seldom much hæmorrhage after the operation, and in no instance, coming under my observation, have I been under the necessity of resorting to either ligature or torsion. In some cases, considerable pain is felt over the region of the bladder, which continues for some hours after the operation; and, occasionally, there is suppression of urine of like duration. These symptoms I have always found to yield to warm fomentations applied above the pelvis; but cases may occur, in which the catheter would be demanded.

I have performed the operation of episioraphy in the following four cases, within the last twelve months.

Case I. July 8th, 1839, Betty, a female slave, ætat. 35, the property of J. H. R. Esq., was placed under my care, on account of procidentia uteri. She is the mother of one child, but has been affected with her distressing infirmity for upwards of fifteen years, to such a degree, that the uterus protruded from the vulva in form of a large ovoid tumour, equalling in size the head of a mature fœtus, and carrying with it the inverted va-

gina. From long exposure, the mucous membrane had become rough, thickened, and scaly; the tumour hung pendulous between the thighs, where it was exposed to constant friction, and excoriation, which, together with the constant dragging pains she experienced, disqualified her for every kind of exertion, and reduced her to a state of perpetual suffering. As the prolapsed organ could be easily replaced, but not retained, all the ordinary mechanical means having previously proved unavailing, I resolved to perform the operation of *episioplasty*, recommended, and successfully practised by Fricke, of Hamburg. The vagina, however, being greatly relaxed, and very capacious, I deemed it advisable so to modify the operative procedure, as to combine with it the advantages of the plans proposed by Marshall Hall and Professor Dieffenbach.

The operation was accordingly performed in the following manner, in presence of several of my medical friends, who were present on the occasion. The hair having been removed, the patient was placed in the ordinary position for lithotomy, and the prolapsus reduced; seizing one labium with the left hand, while it was put upon the stretch by an assistant, an incision was commenced, with a common scalpel, about a finger's breadth from the upper commissure and the same distance from the edge of the labium. This was carried downwards with a bold sweep, and terminated by a slight curve inwards, at a little distance behind the fourchette. A slip of the labium, a finger's breadth in thickness, was thus severed from the external parts, taking care not to cut through the mucous membrane of the vagina. Making traction on this slip, downwards and inwards, the mucous membrane of the lateral portion of the vagina was then dissected up to the extent of an inch and a half, and detached with the excised labium. The same thing was repeated on the opposite side; the incision being so directed, as to intersect the first cut at an acute angle, and remove the fourchette with the other parts. After the hæmorrhage, which was inconsiderable, had ceased, an oiled sponge was passed into the vagina, and the two raw surfaces were brought in apposition, by means of the quilled suture of five stitches, the first inserted near the inferior angle. A catheter was placed in the bladder; the parts were dressed with a compress of soft lint, secured by a T bandage, and the patient was put to bed, with her thighs and ankles properly secured together by means of bandages.

On the subsequent day, it was found that the urine escaped continually by the side of the catheter. This was consequently removed, and as the patient experienced no inconvenience in passing urine, it was not again introduced. Simple dressings were applied until the fourth day, when, union having taken place, the sutures were removed. From this time forward, the case continued to proceed favourably. On the sixth day the sponge was withdrawn, and on the tenth, menstruation took place and continued for the usual period without deranging the healing process in the slightest degree. In about a fortnight, firm union had taken place throughout the whole length of the wound, except to the extent of about three quarters of an inch near the inferior angle. This point was touched, at each dressing, with a solution of sulphate of zinc, under which treatment it closed in a few days, and by the end of the third week, my patient was able to walk about. She was, however, suffered to remain in the city for some weeks afterwards, during which time she suffered no inconvenience, except occasional slight uneasiness about the pelvis, dependent, no doubt,

upon the pressure of the engorged and indurated uterus upon the walls of the vagina. She was finally sent by her owner to his plantation near Georgetown, apparently delighted with her new situation.

Dr. B—— having read a brief notice of the preceding case, which, with some others, was published from a private letter, by my friend Professor Dunglison, in his *Medical Intelligencer*,* was induced to send me the next two cases, under the hope that they might be relieved by the same procedure. It may be proper to state, that they had both been perseveringly treated for some time, with various pessaries, Hull's utero-abdominal supporter, &c., without the effect of overcoming their infirmity.

Case II. Mary, a female slave, aged about 30, of spare frame, the mother of — children, has been for a long time affected with procidentia uteri. The tumour, an ovoid figure, and as large as the head of a child, is hard, rough, and scaly upon the surface. On the right side, there is an ulcerated surface, with hard edges, of an inch, or more, in diameter, occasioned by the friction against the right labium and thigh; the whole vagina being inverted, and the protruded organ hanging pendulous from the vulva.

January 14th, 1840. In presence of the class of the Medical College of the state of South Carolina, and several of my medical friends, I returned the uterus, and performed the operation of episioraphy, precisely as in the preceding case, omitting to leave the catheter in the bladder. In the afternoon, the patient complained of considerable pain over the region of the bladder and uterus, and suppression of urine. Hot steeps were directed to be laid upon the lower part of the abdomen; thirty drops of laudanum to be given. The suppression and pain soon disappeared; and but little inconvenience was experienced at any future period. On the fifth day, one of the middle sutures was removed, union having already taken place, and at the next dressing all were withdrawn. On the eighth, the sponge was taken from the vagina; in a little more than a fortnight, my patient was able to walk about the room; and at the end of the third week, she was sent home, the wound being nearly all cicatrized, and the uterus being apparently well supported in its proper situation.

I should state, that in the progress of this case, I felt considerable apprehension on account of a violent cough, with which the patient was affected, fearing that the efforts of coughing must force the uterus downwards with such violence, as to turn out the sutures. This was soon relieved, however, by syrup. scill. comp. c. tinct. opii camph.

Case III. Maria, a female slave, aged about 28, the mother of — children, also the property of Dr. B——, is affected with procidentia uteri which presents the same characters and appearances of the preceding case. The ulceration, however, is less extensive, and the tumour is not quite as large.

I operated on this woman at the same time and place with the preceding. This operation was performed in the same manner, and precisely the same treatment was pursued. For a few days, the wound did not appear to cicatrize quite so favourably as in Mary's case, and she suffered consider-

* Vol. iii, p. 145, 1839.

ably from pain in the back, owing, probably, to position. She was sent home at the end of the third week, having been able to walk about, without inconvenience, for some days previously.

Case IV. April, 1840. A young female slave, the property of Mr. T. M. H.— is affected with procidentia uteri, with complete inversion of the vagina, and has elephantiasis of one leg, extending as high as the knee. She has never borne children, and can give no account of the cause or first origin of her infirmity, with which she has been affected for several years.

I performed the operation of episioraphy, in presence of my pupils, in the same manner as in the cases detailed above, merely omitting to leave a sponge in the vagina, and using only four sutures to close the wound. At the fourth dressing, I found the space between my patient's thighs, as low as the knees, completely flooded with dark, putrid, excessively fœtid blood, and a large quantity of the same fluid, escaped from the vagina, on making pressure over the pubes. This at first gave me some uneasiness, but as it ceased to come away, I attributed it to a gradual oozing from the denuded walls of the vagina, taking place after the parts had been closed by suture. Had I inserted the sponge as in the preceding cases, this would probably have been obviated.

On the fifth day, the sutures were removed, and in three weeks, the parts were completely cicatrized. During nearly the whole course of treatment in this case, violent paroxysms of pain, apparently of a nervous character, were experienced at night, requiring for their relief, large doses of laudanum.

I, this day, June 18th, 1840, visited the subject of the last case, with the view of ascertaining whether the success of the operation was likely to prove permanent. I was gratified to find her in excellent health: improved in *embonpoint* and in her general appearance, and completely relieved of her infirmity; having at no time since her recovery, experienced the slightest tendency to, or return of, the prolapsus, nor does she suffer any pain, or other distress, about the region of the uterus. *Magister ejus mihi dixit, ita libidinosam, ut fere omni nocte, assidue conquirat commercium hominibus, ut nil dubitat sæpenumero congressu venere frui.*

I also called this morning, on Mr. R.— the owner of the subject of case first. Not being so fortunate as to find him at home, I made particular inquiry of his coachman, who has just returned from Mr. R.'s— plantation near Georgetown, relative to the patient's present condition. I learned from him, that she is in good health and spirits, free from her former infirmity, and fully able to do the labour imposed upon her. Of the other two cases, I regret that I cannot speak with such certainty, as they both reside in the country; but I entertain no doubts of the result being equally favourable with them, as it has proved in the first and fourth individuals.

It now only remains for me to make a few observations, relative to the comparative advantages of the different procedures which have been described above.

The actual cautery and the various caustics which have been used to fulfil the same indication, are liable to some serious objections. Setting aside the pain resulting from their application, which I think must be al-

most insupportable, notwithstanding the assurances of their advocates to the contrary, there are probably but few females who would be disposed for any consideration short of death itself, to have the cavity of the vagina approached with a red hot poker, or, what is scarcely less appalling, the fuming nitric acid. Nor can the extent of the action of these agents be limited with any certainty; and it must be borne in mind, that there is great danger of the development of metritis, cystitis, and peritonitis, from this free cauterization of the vagina. Add to all these the still more important one, that the operation must often fail (I believe this would happen in every case similar to those described above) and we have a strong argument against the use of cautery in any of its forms.

The operation of Kolporaphy (*Marshall Hall and Dieffenbach*) does not expose the patient to so much danger as that by cautery, but I am disposed to believe, that in a majority of cases it will fail of ultimate success. It is true, the advantages seem to have been permanent in Dr. Hall's case, and the same may be true of some of the others, but it is notorious, that in a large proportion of the cases reported by Berard, it either failed from the first, or the prolapsus returned after the individuals had been reported as cured. Besides, should impregnation take place, with a vagina contracted through its whole length, to the extent it must be, to keep up a prolapsed uterus, it is obvious the child could not pass without previously enlarging the canal by free incisions; an operation that could not be performed without considerable difficulty.

When, therefore, the whole grounds are impartially considered, there cannot be the slightest hesitation in awarding the preference to Fricke's operation. It is attended with comparatively little pain; is for the most part free from danger; and rarely fails to prove completely successful—Fricke having cured three out of four, and all my cases, four in number, having terminated favourably. Should the operation fail, it can be repeated, and possesses this important advantage that it can be performed at any period of life, as it does not interfere with menstruation, conception, or child bearing. My fourth case proves that it does not of necessity impose upon the female the restraint of living *absque marito*, and Plath gives an account of a female operated on by Fricke, who conceived, and brought forth a child, notwithstanding the barrier at the orifice of the vagina.* Should this create an obstacle, it could be removed in an instant, by a simple nick of the scalpel.

I do not write, however, to decry either operation. My object has been, to collect together the amount of our information on the subject; to add to it the results of my own experience; and thus to put within the reach of a large number of my professional brethren, who, from their retired situation, have not easy access to the current medical literature of the day, a means of relieving an infirmity, which, from its frequency, especially amongst the plantation slaves of the southern states, must fall very often under their observation.

* Zeitschrift für die gesammte Medicin. Bd. ii. p. 142.

ART. XII. On Diseases of the Fœtus: a contribution towards a better acquaintance with Intra-uterine Pathology. By WM. C. ROBERTS, M. D., of New York.

THE observation made by Morgagni nearly two hundred years ago, that "a wide and almost unbeaten track lies open for the investigation of the diseases of new born infants, by accurate dissections after death, as well as by attentive observation during life," is even now applicable; and we find Dr. Stokes in his clinical lectures on the Theory and Practice of Physic, delivered about three years ago, thus confirming it. "There is one fact in pathology, which seems not to be generally acted on; that there is a class of diseases which are intra-uterine, and with which a child may be born. There are a great many cases of this kind upon record, but still, I must confess there is great scope for investigation, and that our knowledge on this subject is imperfect. I believe that any one who has the opportunity of dissecting a great many stillborn children, or of those who die immediately after birth, would, by examining the state of the different cavities and publishing the results of his examinations, earn for himself very great reputation."

Morgagni (*De Sedibus*) has treated of unnatural formations and diseases in the fœtus, and among the cases are many of great interest. Andral, in his Pathological Anatomy, has recorded, in a general way, many congenital malformations and pathological states. The work of Billard is the richest in accurate and valuable dissections of the stillborn, among whom he has met with many of the diseases observed in after life. Two years after the publication of the first edition of this work, Andry published in the *Journal des Progrès*, Feb., 1830, the only recent ex-professo article on this subject, with which I am acquainted. Ten years have now elapsed since its appearance, and although it contains much that is interesting, and a concise account of the pathological history of the more important diseases, it must, on the whole, be considered as very imperfect. I am surprised that no allusion to the name or labours of Billard appears in it, though parts of it seem copied from his work. Some parts of Cruveilhier's great work on pathological anatomy, are devoted to the diseases of the fœtus. Two very elaborate contributions to intra-uterine pathology, have appeared from the pen of Dr. J. Y. Simpson, of Edinburgh, the one on peritonitis, and the other on some of the presumed consequences of intra-uterine inflammatory action. Such are some of the authorities on this subject, and the facts which they contain have been reassembled by the author in the following paper, with such other examples as his research has supplied. Perfectly conscious of its imperfections, he submits it to the profession as the nucleus of a future more comprehensive summary from some abler pen, on a subject which is beginning more particularly to engage the attention of medical men.

In the detail of observations which I shall give, I purpose to commence with those of the skin and its appendages, the hair and nails; next to consider those of parts externally situated, as the ears, eyes, nose, lips, &c.; then passing inwardly, those of the cranial, thoracic and abdominal cavities, the genitals, internal and external, the spinal marrow and canal. And first,

OF CONGENITAL DISEASES OF THE SKIN.

Petechiæ, Ichthyosis, Pomphigus, some of the Syphilidæ, Variola, Vaccinia, Erythema, Sclerema, Elephantiasis, Anasarca, Erysipelas, Icterus, Absence of the Skin, Congenital Development of the Papillæ, Leucopathia, Warts, Nævi, are among these.

1. *Petechiæ*.—Andral, in his *Anat. Path.*, vol. ii, p. 417, refers to a case related by M. Stoltz in the *Archives Gén. de Méd.*, vol. xv, of ecchymosis in a pregnant woman, similar ones being found in the lungs, pericardium, heart, and vessels of the fœtus. In Cruveilhier, *Anat. Path.*, liv. 15, it is stated, that in an anasarctous fœtus of 7 months, spots of purpura covered the whole surface of the body and mucous membrane of the tongue and intestines, in the muscles, pericranium and mucous membrane of the pharynx. Several of his cases are of syphilitic purpura. Andry remarks that a knowledge of the fact that children are born with ecchymoses, which frequently result from injuries received by the fœtus in delivery, is useful in a medico-legal point of view, as they might be attributed to criminal attempts to destroy the fœtus.

2. *Ichthyosis* is very frequently, but not always congenital, and many facts are on record to prove that it is also hereditary. Thus Martin states that it was transmitted from a mother to her daughter. The two Brayers, who laboured under general ichthyosis, were the sons of a diseased father. Mr. Martin, (*Philos. Trans.*, vol. xlix, p. 21,) gives an account of a man named Lambert, who had six children similarly affected—the celebrated "Porcupine family." There is in the Anatomical Museum at Berlin, a monstrous fœtus, whose entire body is covered with a layer of epidermis several lines thick and traversed by numerous fissures, giving it the appearance of a cuirass. (Steinhausen, *De sing. epiderm. deformatione*. Berlin. *Gaz. Méd.* 1831, vol. ii, p. 10.) The *Am. Journ. of Med. Sci.* for Nov. 1831, contains an analysis of Schmidt's *Descriptio Ichthyosis Cornææ Congenitæ in Virgine Observatæ*, to which the reader is referred as perhaps the most remarkable on record. St. Vander Wiel (*Cent. Post. Obs.* 35) observed a fœtus whose whole surface, except the head, was covered by hard scabrous scales, like the skin of a phoca, which exhaled a bad smell, fell off and were renewed. (Andry.)

3. *Pemphigus*.—Lobstein (*Journ. Comp. du Dict. des Sc. Méd.* vol. vi,) has given an account of a case of congenital pemphigus with ramolissement of the placenta. Other cases may be found in an article by Hintz, (*Bull. des Sci. Méd. de Férussac*, xi. 47,) Goeckel and Sedel (*Eph. Cur. Nat.*) Desormeaux (*Art. œuf humain, Dict. de Méd.* 1st edition,) cites from Oehler an interesting case of what the latter calls Pemphigus, but which Desormeaux considers to be Varicella. (Andry.) In the *Rec. per. d'obs de Ch. Méd. et Pharm.* 1750, vol. i. p. 167 is the case of a fœtus with hair lip, deficiency of nose and palate, the nates inflamed and painful, covered with pustules containing a puriform fluid, large red patches over the body, the heels inflamed and several small *scrofulous* tumours on the ankles.

4. *Syphilis*.—The experience of every day proves to a demonstration, that the fœtus in utero is frequently affected with syphilis. Cutaneous eruptions, although scabby pustules, ulcers and tubercles have been seen by Schenck, Rosen and Desir, are less frequent than a state of cachexy. The 7, 9, 10, 11, and 12 cases in Cruveilhier's Liv. 15, are cases of syphilitic

phylctenæ and pustules. See a valuable paper, on the venereal disease in the fœtus in utero, by Mr. Hey, of Leeds, (*Med. Ch. Trans.* vol. vii.) Bertin (*Treat. on the Venereal Disease in newborn children, pregnant women and nurses.* Par. 1810.) Andry denies the possibility of an infection of the fœtus through the fluids of the mother, thinks external contact the only admissible explanation of the occurrence, though prima facie impossible, and considers the cachexy of the child owing to the excesses of or abuse of mercury by the mother.

5. *Variola*.—Of the many recorded instances of this notorious fact, it may be mentioned that Mauriceau was born with 5 or 6 pustules. Rayer relates a case, which he saw with Messrs. Littre and Young, where a still-born fœtus had on its body a large number. Marc (*Dict. des Sci. Med.* vol. xvi, p. 71,) has related three instances. Jenner, (*Med. Ch. Trans.* vol. i, p. 269.) Deneux, a case of variola in a newborn child, the mother having been vaccinated. (*J. Hebdom.* vol. viii, 2d Series, p. 56.) Husson (*Rev. Méd.* vol. xi, p. 151.) Noblet, (*Arch. Gén. de Méd.* vol. xii, p. 126.) The curious reader may also consult Dr. Davis's erudite work on the *Princ. and Pract. of Obstetric Medicine*, 1834, p. 891, for references to cases by Smellie, Mauriceau, Bland, (the pustules at maturity white and full of matter,) J. Hunter, Baker and Roberts. Also a paper in the *Med. Comm.* 1794, by Dr. Geo. Pearson, on the effects of variolous infection in pregnant women, occupying about forty pages, containing several good cases and a great deal of interesting matter. Dr. Davis also relates a case of twin pregnancy, in which one fœtus was affected with smallpox and stillborn, the other born healthy and alive; and one from Mortimer, where the fœtus became infected in utero, in consequence of its mother having seen a woman who was labouring under the disease; and a similar instance from Watson, *Phil. Trans.*, vol. xlvi, p. 235. A case of this kind, preserved in the anatomical cabinet of Guy's Hospital, is related at length by Billard.

Scarlatina has never, I believe, been known to affect the fœtus in utero. Vogel and others assert that *rubeola* has been seen at birth; and Rosen (*Dis. of Children*, ch. xiv, p. 255) has given some interesting cases of congenital measles. Billard states that he had seen a child born with an *erythema* in the form of little irregular patches, disseminated on various parts of the body, the aspect of which simulated measles.

I also refer the reader to an account contained in the *Med. Ch. Rev.* Jan. 1830, copied from the *Journ. des Prog.*, vol. xv, and into it from a Swedish journal, of the case, *seemingly authentic*, of a child who, soon after birth, was observed to have upon its arms regular "*vaccine tubercles*" in the same number and at the same points as those which had previously appeared on the mother, on whom they reached maturity on the day of her delivery. The tubercles went on to maturation and left cicatrices after them agreeing in all respects with those of the mother.

As I have now treated of some of the diseases communicated from the mother to the fœtus in utero, I may here, with propriety, introduce the statement made by Dr. Elliotson on the 141st page of his work on the *Practice of Physic*, on the authority of Dr. Russell, of Aleppo. "A woman who had a tertian ague, felt the child within her shake every other day, when she was disposed to be quiet. Peruvian bark cured both, but the child had one paroxysm less than the mother. A similar case, says

Dr. E., I saw at a dispensary. The woman came shaking, and the child within her shook like herself, but at a different time." In the *Am. Journ. Med. Sci.* for Feb. 1828, is the case by Dr. Warren, of a fœtus poisoned by opium taken by the mother.

6. *Elephantiasis*.—Among 23,000 children born at the Maternité in Paris, M. Chaussier twice saw this disease in the lower limbs. It was a tense, elastic, compact, indolent tumefaction, without redness, or any sensible alteration of the skin, and not œdematous. The parts were divided by two deep, narrow, circular furrows, looking as if made by a string. The external cutis was healthy, but the vesicles of the adipose tissue were filled with white compact fat, and their areolæ with a sero-gelatinous fluid, easily expressible on pressure. Alard, in his work on this disease, mentions similar facts in the legs and feet of the fœtus.

7. *Sclerema*. (Skin bound œdema, or hardening of the cellular tissue.) This disease of the new born child, which may either be congenital, or occur soon after birth, is, I suspect, more common in France than in England, or in this country. At the time when it attracted the attention of Andrii, six hundred children died of it annually at the Hospice des Enfants Trouvés, at Paris, and recently M. Billard, in a most elaborate article on this subject in his work on children, speaks of the dissection of seventy-seven children labouring under it, and says that two hundred and forty were admitted with it, in one year, into the Foundling Hospital. There are two varieties, the œdematosa and the concreta. Both arise from a similar cause, an accumulation of highly coagulable serum in the subcutaneous adipose and intermuscular cellular tissue, and occasionally, that of other parts, as of the lungs. The phenomena which they offer differ, but I refer to the authorities for a detail of the peculiarities. The article in the *Dict. de Méd. et de Chir. Prat.* is a very good one, and in that entitled "Induration of the Cellular Tissue," in Copland's learned Dictionary, is a list of references to authors and an excellent account of the disease. I shall only further mention Andrii, (*Mem. de la Soc. Roy. de Méd.* 1784,) a very instructive chapter in Underwood's Treatise on the Diseases of Children, on what he calls "skinbound," which he was among the first to notice in England—Denman, Burns and Matthew Baillie. In the first vol. of the Works of the last by Wardrop, 1825, p. 75, he describes concisely, but accurately, the concrete variety of the disease, in what he calls the "case of a remarkable hardness of the skin of an infant:" this hardness, which was not universal, being like that of leather used in making strong shoes; the fat was gathered into little lobules and firmer than common, and the superficial muscles had in some degree partaken of the diseased change. No internal disease was noticed. Dr. Stratford, in the *Boston Med. and Surg. Journ.* for 1829, has related a striking instance of the œdematous form; the child lived for three weeks, during which time the serum became absorbed and the skin hung in folds upon its body.

8. *Anasarca* is an affection closely allied to this of which I have just spoken. It is always symptomatic. In the first case of acute peritonitis recorded by Dr. Simpson (*Ed. Med. and Surg. Journ.* Oct. 1838) it is stated that there was a considerable accumulation of serous and sero-sanguinolent effusion in the cellular tissue in various parts of the body. In case 6 the face was swelled and deformed with œdema, and the upper extremities, particularly the hands, œdematous. In case 11, born living,

the hands, and not the lower limbs, were anasarcaous. In case 14, slight serous infiltration, more particularly in the lower extremities. It probably accompanies most cases of congenital abdominal dropsey which are met with, though of this I have not satisfied myself by reading. Otto says that in some rare cases, a turbid serum is effused between the bones and their investing periosteum, in dropsical newborn children. *Compend. of Path. Anat.*, translated by South, p. 178.

9. *Erysipelas*, says Dr. Good, in his *Study of Medicine*, vol. ii, p. 260, "sometimes attacks infants from a very early period after birth, and what is more singular, they have in a few instances been born with it." I know of no cases in support of this assertion.

10. *Cirrhonosis. Icterus*.—The fœtus is often born with the skin of a yellow colour, but this jaundice is not proved to depend upon the presence of bile; the analysis of M. Chevreul, of the blood of icteric and scleromatous fœtuses, renders it probable, but his views are ably controverted by Billard. "It has long been remarked," says Andral, *Anat. Path.*, West's translation, vol. i, p. 583, "that yellow spots sometimes appear either on the skin, or other tissues, and the learned Professor Lobstein, of Strasburg, (*Rep. d'Anat. Path.*, vol. i.) in several immature embryos, found a very marked golden tinge in different parts, chiefly the serous membranes of the cranium, thorax and abdomen, spinal cord, and two cords of the great sympathetic." This affection appears to Andral to differ from *Icterus Neonatorum* only in situation. Ollivier (*On the Spinal Marrow, &c.*, vol. i., p. 209, 2d ed.) treats fully on it. "An observation by Kerkringius, in the *Sepulch. of Bonetus*," says Morgagni, (vol. ii, p. 176, Cooke's translation,) "introduces to our notice the bones of an icteric fœtus exceedingly yellow, and this circumstance would not excite our surprise, because instead of blood, he found a yellow humour like bile." Desormeaux saw a small newborn child whose skin was of a yellowish green colour. The liquor amnii was also of a deep yellow, and stained the linen on which it was shed. The child, though born weak and thin, soon recovered its health and colour. (Andry.) Lobstein has described another sort of jaundice, consisting in an infiltration of a yellow humour in the cellular tissue of the skin, muscles and organs of the body, consequent on *complete disorganization of the cerebellum*. The child was small; its whole body very yellow: it had excoriations on the face, and the epidermis of the hands and feet was removed. The intestinal tube was moderately filled with a yellowish albuminous fluid, and contained no meconium. The liver was of its natural size, and the gall bladder contained a very thin green fluid. The spleen was very large, three inches long and one and a half broad. The bladder was half full of a yellow fluid like that in the intestines, and its inner membrane was spotted red, as if with petechiæ. The umbilical arteries and vein were contracted, and their walls thicker than usual. The lymphatic vessels of the chest were very apparent, and some appeared distended with a yellow fluid; the conglobate glands were equally yellow and semi-transparent. The tunics of the innominate and right carotid were spotted in the same manner as the bladder, which spots could neither be washed, nor scratched off. Between the pia mater and cortical substance of the brain, yellow lymph was effused, spreading over both hemispheres; extravasation of blood had occurred in two places in the brain. No blood existed in the sinuses or vessels, and no fluid in the ventricles. The outer

layer of the cerebellum was of a deep red, forming a cortex a line thick, which having been incised, showed disorganization of the substance of the cerebellum, which was changed into a thick albuminous yellow matter, like the yolk and white of eggs beaten together. The medulla and nerves were natural. Between the dura mater and processes of the vertebrae, was spread a yellow lymph like that upon the brain. The muscles were generally pale and yellowish. Their interstices, and the subcutaneous cellular tissue, chiefly that of the joints, were bathed in the same yellow layer.

Nothing analogous to this change in the cerebellum has ever been met with in the adult; it was neither encephaloid nor medullary sarcoma. Hence, says the learned professor, the necessity of studying the changes of organization presented at even the tenderest age, and here a proof is afforded that an examination of the comparative pathology of the fetus and adult, will be more and more fruitful in interesting results. (Andry.) Billard had seen four cases analogous to this discolouration spoken of by Lobstein, but without the disorganization of the cerebellum.

11. *Absence of the Skin* necessarily occurs when the thoracic or abdominal parietes are deficient; and Rayer states that a primitive deficiency of the epidermis has been seen in new born children. In Ploucquet's *Bib. Med.* I find the following reference: "Garmann. Ep. 308. Fœtus epidermide carente." Otto, *Path. Anat.*, p. 103, states, that although the formation of the skin may be imperfect, it can never be entirely wanting.

Under this head I may, perhaps with propriety, state, that Dr. Joerg of Leipzig has seen a general desquamation in the new born child. (Andry.) The child was full grown and healthy in appearance. Naegele relates the following case, which may be found in the 7th vol. of the *Journ. des Progrès*, &c.: "The liquor amnii, when discharged, was putrid, thick, fetid, and of a blackish green. The skin of the child was cadaverous and his flesh soft. When placed in a warm bath the epidermis peeled off on the slightest touch, so that it might easily have been all removed: on the face and hands it was wholly gone, and the skin below was very red, and as it were furrowed: gradually it all came off, was regenerated, and the child did well." (Andry.)

12. *Congenital Development of the Papillæ*.—I shall cite further on, says Rayer, *Mal. de la Peau*, vol. iii, p. 613, a case of congenital development of the papillæ, which became as fringes, were red and covered with an epidermis, as it were cartilaginous. The same author states, p. 681, that a man died in the Hosp. St. Antoine, who had in his body a great many congenital tumours, varying in size from a pea to a hen's egg: the section was smooth, white and cellular, not fatty; the smaller ones containing no vessels. He calls it "hypertrophy of the cellular tissue." Mr. Mayo, in his *Outlines of Human Pathology*, refers to the case of a person whose arm is modelled in the museum of King's College, London. It is thickened on the back part of the limb, of a brown colour, and hangs in a thick pendulous flap, several inches long. The hypertrophia was congenital. In the catalogue of Soemmering's famous museum at Frankfort on the Maine, p. 75, occurs the following: "*Monstra. 3. Fœtus neonatus feminino, cretinismo laborans Salisburgensis, pororum sebaceorum insignis magnitudo.*"

13. *Leucopathia* is a discolouration, congenital or accidental, of the skin, hair and eyes, owing to the absence of colouring matter in these

organs. General congenital leucopathia constitutes albinism, in which the skin is of a dull white, the hairs white as silk or cotton, the iris of a pale and the pupil of a deep red. Piebald negroes are instances of partial congenital leucopathia.

The following very curious case of an opposite discolouration, which might be called iodopathia, is related by M. Chamseru, in the *Hist. de la Soc. Roy. de Méd.*, vol. iv, p. 264: "A child was born with a violet coloured skin, which in certain parts grew darker gradually, and became nearly black. The whites of the eyes, and the irides, became of a violet hue. It was living at 8 years old. (South, in Otto, p. 107.)

14. *Warts*, which are eminences produced by the hypertrophy of the papillæ, and sometimes of all the layers of the skin, have been known to be congenital. A very remarkable case in a full grown fœtus, has been described by M. Ollivier D'Angers, in the 35th vol. of the *Arch. Gén. de Méd.*, p. 74. On the anterior part of the chest and abdomen, existed an infinite number of warts of a grayish white, several as large as a lentil, and all more or less pediculated. The verrucous vegetation also existed on the shoulders, arms, elbows, thighs, and nates. All the organs within the fœtus were healthy. Dr. A. T. Thompson, in his *Atlas of Delineations of Cutaneous Diseases*, p. 100, relates two cases of warty nævus. The skin of the right side of the chest, from the nipple to the clavicle, in a healthy young man, and that of the axilla of the same side, of the internal surface of the arm and fore arm, for a width of nearly two inches, presented congenital papillary eminences, which had grown rapidly within a few months. They were elastic, reddish, fungoid, narrow based, and so crowded together as almost to stand upright, about four lines long, and three lines wide, bathed in a fetid exudation. The epidermis was dense, and like cartilage when cut. They were removed by caustic. The other case occurred in the lip and chin of a child, and was excised. "I have seen a boy," says Otto, p. 113, note 5, "who had a mother's mark affecting the neck, the left side of the breast, and the greater part of the back, covered with black hair, and with horny warts and points." Lobstein describes a fœtus as existing in the Strasburg Museum, entirely covered with warts. "I saw," says Billard, "a new-born child in the Foundling Hospital, which had on each cheek, a cutaneous excrescence half an inch long, and as big as a crow quill. Two others, also, of the same size, but much less prominent, existed in front of each ear, and the concha of the left scarcely existed at all, and its aperture was completely occluded.

15. *Nævi*.—There remains to be noticed only the congenital blemishes, or marks, with which the skin of the newborn is affected. These, which are very various and numerous, may be ranged under three groups. The first comprises congenital anomalies of the coloring matter; the second, vascular productions and hypertrophies; the third, the congenital cutaneous and subcutaneous hypertrophies, of which examples have just been given.

Under the first head come *Spili*, yellow, or coffee-coloured spots, (*nævus chloasma*), brown, or black spots, (*nævus niger*), bronzed hues, or as in the case of Gdart., the "living angel;" bluish or grayish black spots. Under the second head, are ranged the hypertrophies of the vascular elements of the skin, comprising angiectasia capillaris; and lastly, erectile and varicose tumours, the diseases commonly called aneurism by anastomosis.

Nævus araneus, *nævus flammeus*, the claret coloured spot so commonly seen upon the face in our streets, called by Alibert "*ecchymoma congenitale*." Instances of such common occurrence, it is unnecessary to quote. Rayer, who describes them all, has given their bibliography, eulogizing particularly the papers by M. Tarral, in the *Arch. Gén. de Méd.*, Sept. and Oct. 1834, as containing most of the cases published up to that period. I may not however, omit to mention the paper by my zealous and talented friend, Dr. John Watson, of this city, contained in the *Am. Journ. of Med. Sci.*, May, 1839, on telangiectasis, in which many cases are given and much research and pathological acumen exhibited.

CONGENITAL AFFECTIONS OF THE HAIR AND NAILS.—These are absence, superabundance, whiteness or particolour of the former or absence of the latter.

Congenital absence of the hair is rare, and seldom lasts more than a few years. Beavais, however, whose case is related by Rayer, had at 32 years of age, neither eyebrows, nor eyelashes, no hair on the head and very little on the pubes or in the axilla. He shaved only once in three weeks. Children, says Otto, p. 120, note 2, are, according to Haller, often born covered with hair, which often grow from the surface of *nævi*. Children have been born with very white tufts of hair. I have seen, says Underwood (*On Children*, vol. i, p. 96) two instances, where one half being red, the other half was in one instance black, in the other white.

Nails.—Bleeh asserts that there is in the museum at Berlin, a fetus without nails, an extremely rare vice of conformation. Otto, p. 118, note 9, speaks of a common nail for several fingers.

Of the Ear.—The existence of congenital deafness is well known, and the reader may consult the *Med. Ch. Rev.* Jan. 1836, for the dissections in three cases, by Messrs. Cock and Thurnam, in which it arose from malformation. The post mortem appearances, viz., absence of the *membrana tympani* and *ossicula* on one side, the semicircular canals being filled with caseous matter, in a fourth case, one related by Dr. Edwards, in the *London Med. Gaz.* for Feb. 1840, p. 793. Underwood has known the ears imperforate, the concha and meatus being wholly obliterated. In Graefe and Walther's *Journ. fur Chirurg.* xix, 1, is a remarkable case of absence of the external ear and obliteration of the meatus. Instead of the right ear, there are three protuberances, not cartilaginous, and on the left side one. The meatus is either deficient, or closed by common integument, but the hearing is not much impaired. A third ear has often been found.

Of the Eye.—The congenital malformations of the human eyes and eyelids are exceedingly numerous, and, in a physiological point of view, of the highest interest. But as I restrict myself, with very few exceptions, to the strictly pathological anomalies of the fetus, I shall here abstain even from naming them, referring the reader to Otto's *Path. Anat.* by South, and particularly to the elaborate observations "on the original malformation and total want of eyes in man and the lower animals," by B. W. Seiler, Dresden, 1834, and to the analytical review of the work in the *Med. Chir. Rev.* for April of the same year, for all information on these points.

A physician of this city informed me he had met with a congenital *mucocoele*. Dr. Farrar relates the case of newborn triplets, in each of whom the *cornea* was quite opaque. Wardrop, in his work on the Eye, refers to several cases of congenital tumours growing on the cornea, as

also Middlemore in a recent No. of the *Med. Chir. Rev.* Graefe has seen cases of *Telangiectasis* of this membrane. *Staphyloma corneæ* is common. The existence of congenital *cataract* and *amaurosis* is perfectly well known. Kiesir, (in Himly and Schmidts *Oph. Bib.* vol. iii.) had seen hereditary congenital *leucoma* of the whole of the cornea except one lozenge shaped portion in the centre, which was perfectly transparent. Morenheim has observed the *arcus senilis* in a fœtus, and Andry, *Journ. des Prog.* vol. i. 1830, p. 195, states that he had witnessed a complete *obscuration of the corneæ* of both eyes in a newborn child; they were pearly white and of considerable consistence.

Of the Nose.—Congenital malformation of the nose usually occurs in conjunction with other monstrosities. The following very curious instance of congenital *nasal polypus*, occurs on p. 77 of the *Cat. of Soemmering's Mus.* "Monstra, 26. Fœtus ingenti polypo faucium, capitis molem superante, quinimo polypi minores per nares penetrant." Voisin, also, is cited by Andry, as describing an enormous congenital polypus, entirely filling the mouth, shapeless, angular, as big as a nut, situated on the posterior part of the palate, to which it adhered by an osseous pedicle. It was successfully removed on the very day of the child's birth.

Of the Mouth.—The mouth may be either imperfectly developed, (atelostomia,) or wholly wanting, (astomia.) Of congenital astomia and absence of the nose, M. Littre has given an interesting case in the *Mem. de l'Acad. Roy. des Sci.* 1701. With the former of these malformations, the bones of the face, the upper and lower jaws, are often found imperfect, or wholly absent. The lips, one or both, may be absent, in which case the whole interior of the cavity is exposed to view. They may be simply adherent, or united by a membrane, and lastly, they, with the bone and soft palate, may be so divided as to constitute the varieties of that common and well known congenital deformity, *hare-lip*. In a vast majority of cases this is confined to the upper lip, but Meckel and Schubarth have each recorded cases in which the lower one was divided. Billard's 96th obs. is one of a very curious congenital smallness of all the parts which constitute the mouth, which he relates in detail. Underwood once saw the mouth much wider on one side than on the other: it appeared as if it had been divided far into the cheek. The deformity was remedied by an operation. M. Veron related at a session of the Royal Academy of Medicine, some cases of "Muguet," very similar to what we term aphtha, from which he infers that it may be developed in the fœtus. Some cases of the same kind are described in Cruveilhier's *Anat. Path.* 15 livraison.

Torticollis, a disease arising from a disparity in the length of the sterno-cleido mastoid muscles, owing to a degeneration of the proper tissue of that on one side, is met with as congenital. For some other anomalies of the muscular system, I refer to the 34th vol. of *Dict. des Sci. Méd.* p. 182.

In pursuance of my plan of treating of the external affections of the fœtus, before speaking of those which interest the internal organs, I come next to

Deficiency of the Abdominal Parietes.—A very remarkable case of this deviation from the natural structure, is recorded by Dr. Montgomery, in the *Dublin Med. Trans.* N.S. vol. i. 1830, in which nearly all the abdominal viscera and the intestinal canal, were exterior to the integuments of the abdomen. "Millett," says Billard, "has reported in Vandermonde's *Journ.* May, 1756, the case of a woman who was delivered

of a child in whom the whole stomach, small intestines, colon, mesentery, left kidney, and suprarenal gland, and the spleen, had passed out of the belly through a round hole half an inch wide, situated in the umbilical region, two lines from the navel, and hung down to its thighs. It died in two hours. The peritoneum and epiploon were totally absent. The pancreas did not exist and the liver was enormously large. A case is related in the *Amer. Journ. of the Med. Sci.* for Nov. 1836, by Dr. Campbell, of Albemarle Co. Va., in which "the anterior parietes of the abdomen, between the xiphoid cartilage and the symphysis pubis, the ends of the false ribs, and the spines of the ileum, were deficient, the bowels being covered with a thin membrane only, which was ruptured before delivery. There was no appearance of an umbilicus, except a single very small artery, without either vein or external covering, which issued from a point midway between the last false rib and the spine of the ileum, where the muscles and skin terminated. Other malformations existed in the limbs; the vagina ended in a cul-de-sac, and the internal genital organs were deficient. There was but one kidney, larger than natural, attached to the diaphragm about in front of the stomach. All the other organs were normal. In a note on p. 282 of the Am. ed. of *Gooch's Lectures on Midwifery*, the editor, Mr. Skinner, describes a case of this kind, in which the abdominal parietes were entirely deficient, the viscera were neither formed nor placed naturally, and were covered only by a thin transparent membrane. There were no large intestines and no bladder, &c. The February Number of the *Am. Journ. Med. Sci.* for 1838, contains a case by T. Currell, M. D., of S. C. The viscera could be easily seen, as well as the liver, through the investing membrane, and were much inflamed. The child lived two days.*

Cleft through the Sternum.—In the first volume of the same Journal, Doctor Tucker relates a case of this kind.

CONGENITAL AFFECTIONS OF THE SKELETON.—The following abnormal congenital conditions of the bones, are enumerated by Meckel, (*Man. of Gen. and Descr. Anat.* Doane's ed. vol. i.) 1. Congenital deficiency of the cartilages of the ribs. 2. Deficiency of vertebrae, or of some parts of them, as in spina bifida. 3. Absence of sternum. 4. Openings at the lower part of the body of the bone, or in the xiphoid appendage, or fissure of that appendage. 5. Deficiency of the usual number of ribs; shortness; consolidation; (Otto, p. 208, note 2.) anomalous curves, or supernumerary ribs. 6. The congenital conditions of the bones of the head and face, in acephalia, encephalocele, hydrocephalus, and hare lip. 7. Deficiency of the humerus, or one, or both bones of the fore arm. 8. Total or partial deficiency of the bones of the hand; increased number of the same; fusion of one or more bones of the fingers. 9. Loose connection of the ossa pubis. 10. Total, or partial deficiency of the bones of the thigh, or one, or both bones of the leg. Otto is rich in information on this subject.

1. *Smallness of the Head.*—M. Cruveilhier in his *Anat. Path.*, states that he saw a child, which lived eighteen months, with a head so small that

* A very interesting case in which a portion of the anterior parietes of the thorax and abdomen were deficient, is related by Dr. Thomas Robinson, of Petersburg, Va., (*Am. Journ. Med. Sc.*, Feb., 1833, p. 346,) and a similar case has been communicated to the Provincial Med. Assoc., by Dr. John O'Brien, of Bristol, (*Am. Journ. Med. Sc.*, Nov., 1838, p. 192.) Editor.

it was like that of one of the lower animals. The vertical diameter of the cranium was one inch. It gave no sign of intelligence whatever. The cranium was filled with a brain which differed from the healthy one only in the smallness of its dimensions.

Billard has often seen the osseous fibres of the head bones, instead of going from the centre to the circumference, interrupted, and arranged in small isolated masses, between which was placed a cartilaginous substance. He also saw a considerable depression of the anterior and lower part of the right parietal, apparently owing to some compressing cause applied during ossification. A case is cited by Otto, p. 16, from Frank, in *Textors Neuem. Chiron.* vol. i, pt. II, p. 261, of a woman, who had, on the back part of the pelvis, a bony tumour, and bore four children, each of whom had a deep indentation, and an unossified spot in the forehead. Otto also speaks of a shortness of the lower jaw, causing death by preventing sucking.

2. *Lateral depression of the Chest.*—This was originally described by Dupuytren, in the 5th vol. *Rep. d'Anat.*, as having been frequently noticed by him. It consists in a depression of the sides of the chest, a proportional projection of the sternum and abdomen anteriorly, and of the vertebral column posteriorly. The lateral depression, in some cases, is such as that the two sides of the chest may be embraced by the fingers of one hand. It is attended generally with a constitutional cachexy, and is susceptible of alleviation by treatment, both regimenal and mechanical, which Dupuytren points out. Billard has cited a case of this kind, ending in death at ten months from dyspnoea. The heart and lungs were healthy, but much compressed by the flattening of the walls of the chest.

3. *Mollities Ossium.*—Rachitis. A notice of this disease in the fœtus, occurs on p. 75 of Sæmmering's Cat. "Monstra 2. Puella neonata, mollities ossium laborans." Pinel, in his *Médecine Eclairée Par les Sci. Phys.* vol. i, p. 3, mentions having the skeleton of a cachectic fœtus, whose bones were all softened and twisted, and the cranium membranous. Chaussier had also met with it. Sæmmering attributes it to inflammation of the bones. Bourgenaud has written fully on congenital distortions in the *Ann. de la Soc. Med. de Montpellier*, vol. i, pt. i, p. 182.

4. *Gibbosity of the Pelvis.*—A case of this kind, very solid and projecting, situated above the pubis, occurring to M. Miart, is mentioned in Velpeau's *Tokology* as a cause of dystocia. Another occurs in Baudelocque.

5. *Fungus Hæmatodes.*—Dr. Tonnillé, *Journ. des Prog.*, vol. xiv, relates that an enormous tumour of fungus hæmatodes, was attached to the right parietal bone, forming a kind of double head, and the base of which medullary sarcoma appeared to be seated in the medullary tissue of the cranium, which it perforated like a sieve. *Med. Chirurg. Rev.*, October, 1829. This case is unique.

6. *Tumours* have been observed upon children at birth, such as encysted steatomatous, lardaceous, purulent, bloody, &c. In one situated in the iliac region, Chaussier found a sort of oblong cartilaginous spine, rising from the crista of the ileum. Denman makes this quotation from Ruysch, *Obs. An.*, 52, Francis ed. p. 408. "Partus difficilis, a tumoribus e capitibus fœtum dependentibus." Dr. Paul amputated the thigh of a child seven weeks old, for well marked fungus hæmatodes of the leg. At birth two tumours were observable, the one running into the other; the lower one said to be as large as a turkey's egg; the lower less. *Med. Chirurg. Rev.*

January, 1834. A paper on a "Peculiar Form of Congenital Tumours of the Neck," has been published in the *Med. Chirurg. Trans.*, 1839, vol. xxii, by Mr. Cæsar Hawkins. Mr. H. adverts to a great variety of congenital encysted tumours occasionally found in infants, and describes seven cases of tumours of a peculiar form in the face and neck, composed of many cysts united together, and having in them so large a portion of organized matter, as to give them a solid character. In his first case, the child was eight months old when seen. The tumour at birth was the size of a small orange. In the second, one year, and the tumour about the same size, not having increased materially. In the third, eleven weeks, it had suffered from its birth severely from suffocation, and died in a few days, from that cause, suddenly. The tumour, as large as an orange, on the right side of the neck, was composed of probably many hundreds of small cysts, varying in size from a pea to a walnut, closely joined, composed of a delicate membrane, and containing in most, a transparent, and in others a reddish coloured serum. The cysts extended behind the pharynx and œsophagus, some as high as the basilar process, others as low as the sixth cervical vertebra, embedded in the common cellular texture. Little was to have been hoped for from an operation. They may be mistaken for fatty tumours, or subcutaneous nævi. Otto, p. 173, note 4, speaks of a deficiency of the zygomatic arch, in consequence of the pressure of a congenital tumour on that region, and on his 198th page, cites Friedlieb as describing children born with large encysted tumours on the back, not spine bifida. He states too, that once, in a newborn child, he found an irregular shaped, angular, and rather long piece of cartilage, on the sterno-mastoid muscle. On his 226th page, note 4, he mentions a child who had on the inside of its upper eyelid, a tolerably large swelling, consisting of firm cartilage, and closely attached by a neck to the interior of the orbit. The following case from Otto, p. 370, (South's Trans.) note 1, may with propriety find a place here. "In a newborn child, with large dropsy of the head, I found, situated externally upon the skull, between the common integuments of the head and the membranes formed by the dura mater and pericranium, many flat adipose tumours, with much black hair, and surrounded by the cellular tissue. One penetrated the dura mater, and projected inwards in the form of several smaller similar swellings, which lay on the dura mater and arachnoid

7. *Fractures.*—The following very remarkable cases of spontaneous fractures in the fœtus, will be found in the *Dict. des Sci. Med.* art. *Maladies du Fœtus*, p. 62. In November, 1803, a full grown and apparently healthy child was brought to the Maternité. While being dressed, its limbs were observed to possess an unusual mobility, and on closer examination, the bones of all the limbs were found to be fractured nearly in their centres. The child died in a few days, and on dissection, all the large bones were found broken, some in their centres and some elsewhere. The larger number of the ribs, and some of the bones of the cranium, had sustained a similar injury; forty-three fractures in all were counted, some of which had begun to reunite, and some were perfectly consolidated.

A second child, seen in 1815, which lived a day, presented something extraordinary in its external conformation. The bones of the limbs were thick, wide, short and curved, and their surfaces irregular, and all separated by deep furrows. On removing them, they were flexible in the middle, and a crepitus, more or less distinct, was discoverable. Some of the fractures

were already united. The periosteum was white and very thick in those parts which still crepitated. M. Chaussier detached a portion of the periosteum which covered the tibia, and saw that the transverse surfaces were red, uneven, and formed of small granules, interwoven with laminar filaments, which extended from one surface to the other. The united places presented a little whitish, cellular elevation. The muscles enveloping the fractured long bones of the limbs were thick, folded and flexed in their length. The spine, pelvis, and lower jaw were uninjured, but there were seventy fractures of the ribs, some consolidated and marked by a long callus. The whole number of fractures was one hundred and thirteen. No cause for these accidents could be assigned in either case. (*Bull. de la Fac. No. 3, 1813.*) Devergie, in the same work, 1825, p. 178, relates that a woman struck herself against a table when six months pregnant. The child was born with a voluminous tumour on the right clavicle. It died on the 8th day, and the fragments were found riding a little on each other, and consolidated by a solid and large callus, which formed the tumour. Carus has related a case of fracture of the tibia, to be presently mentioned.

A woman was delivered prematurely of twins, one of which had a fracture of the left femur. The bone had pierced the flesh, was square, and protruded more than an inch. Some weeks previously, the mother had felt, on a sudden movement of the fœtus, a snap in the uterus like the breaking of a stick, and had ever since felt a pricking pain in the belly. Schubarth in a German Journal, copied in *Journ. des Prog.* vol. vii, page 247. Amand delivered a woman of a dead fœtus of five months. The bones in the middle of the forearms, thighs and legs, were separated and movable, as if broken on purpose, and seemed connected only by skin. (*Nouv. Obs. sur la prat. des Accouch.* (Andry.) The famous case related by Malebranche, is well known. Hartsoeker, (*Suite des Conj. Phys.* Amstel. 1708,) and Muys (from Bidloo) D'Muscartif, fabrica, 1750, have cited similar cases. The following case of *False Joint*, occurs in Billard, *Obs.* 85; "On examining a child two months old, I perceived that the humerus was movable at its middle part, where a sort of false articulation existed; a solution of the continuity of the bony structure for an extent of four lines, the space being filled with a pretty thick cartilaginous substance, whose extremities were in contact with the roughened ends of the bones. It would appear as if a spot on the bone had, by some singular anomaly, not ossified. Blundel (*Obstetrics*) had seen four fractures in one fœtus.

Luxation.—Hippocrates, in his treatise *De Articulis*, mentions several species of luxation, which may occur to a fœtus in utero. "A few years ago, a child was placed in the Maternité, who had both thighs, both knees, both feet, and three fingers of the left hand luxated, which Chaussier supposes always to depend upon some disease sustained by the fœtus in utero." (*Dict. des Sc. Méd. Art. Fœtus.*)

In the *Gaz. Méd.* for 1835, is a case of congenital luxation of the femurs, observed in a girl 11 years old. To this case, M. Pravaz has appended a note on the treatment of congenital luxations citing a remarkable case (of cure) and referring to the observations of Paletta, Dupuytren, (in Breschet's *Rep. Gén. d'Anat.* vol. v. part 1, p. 110,) Humbert and Breschet. M. Pravaz' Article on the orthopœdia of the pelvis, (in the *Dict. de Méd.* 2d ed. vol. v, p. 95, 'Bassin,') and also the able report of M. Gerdy, on two memoirs by M. Pravaz, relating to the causes and

treatment of congenital luxation of the femurs, published at Lyons in 1820, contain the best information relating to our present knowledge on this subject. See also Billard and Cruveilhier.

"There is," says Ollivier, (*Moelle Ep.* vol. i, 2d ed. p. 51,) "a species of deformity, which it seems to me that authors have not sufficiently observed, though very common, viz.

Congenital Shortening of the Arm, which is sometimes such that the humerus seems only two-thirds or half of its natural length. Though met with in both arms occasionally, it is oftener seen only in one. As yet, I have dissected no subject presenting this defective conformation, and know not whether, in the latter case, it be connected with a diminution of the corresponding half of the swelling of the medulla spinalis or not." This point, therefore, is open for investigation. Rostan speaks of "congenital atrophy" of the limbs, but whether of the soft tissues alone, I cannot say. "Of congenital shortening of the limbs," says Otto, "Meckel has collected several cases; see his Schreger, *Chir. Versached*, vol. ii, and mentions three children in one family, born with shortening in the thigh. Duges, in the *Med. Ep.* of Montpellier for July, 1826, has written on congenital paralysis and agenesis.

Spontaneous Amputation of the Limbs of the Fœtus in Utero.—This mutilation has been ably treated of by Dr. Montgomery of Dublin, first, in the early part of 1832, in *Dub. Journ. Med. Sci.*, vols. i and ii, and at more length in an appendix to his erudite work on Pregnancy. Since the first of these publications, a most excellent paper has appeared from the pen of Dr. Simpson, in the *Dub. Journ.* November, 1836, vol. x. p. 220, into which he has collected a vast quantity of curious information, many interesting cases from authors, and not a few from his own observation. Vassal in the *Gazette Médicale*, 1835, gives a case in which a fœtus was born with only one arm, the scapulo-humeral articulation being covered with a circular cicatrix. The humerus, radius, and ulna, were found in the patient's bed. The case contributed by Dr. Fitch, in the Number of the *Am. Journ. Med. Sci.*, May, 1836, is republished by Dr. M., in which the foot had separated at the ankle-joint, and what is very curious, the healing process in it had been as perfect, and nearly as rapid as that on the lower extremity of the limb, although the former escaped per vaginam on the 17th of March, and the delivery did not occur until the 5th of April. The same singular circumstance occurred in the case cited by Veiel, (Simpson), the fore foot being born of itself quite healed. Chaussier saw two children who wanted each a part of the fore arm. The stumps presented compact whitish cicatrices, *Dict. des Sci. Méd.* In vol. x of the *Arch. Gén. de Méd.*, is a case published by Billard, and originally occurring to Dr. Watkinson, of a complete division of the left foot above the ankle, in a living seven months fœtus. The amputated limb was cicatrized, except in the centre. The foot lay in the vagina, and it also was cicatrized, except where the bone projected. It offered no traces of putrefaction, and had from its size probably been separated about two months. (Andry.) I shall not further lengthen this article by detailing cases to which all may have access, but shall merely append, as confirmatory of the idea entertained by Montgomery and Simpson, "that the thread like membranes, which stricture the limbs, and so prevent their developement, consist of organized lymph, such as is usually elaborated under the influence of inflammatory action, from which it is

well known that many varieties of foetal deformities arise," (see St. Hilaire's work on Monstrosities;) that a case occurred to M. Morlanne, where a fœtus of five and a half months, was born with adhesions of the legs and thighs to the breast and abdomen, six weeks after the discharge of the waters, the absence of which probably induced the parts to come into contact, and inflame; (Gardien. *Journ. des Acc.* vol. ii, p. 173.) and that Newnham, (vol. iii, *Med. Repos.*) cited a case of preternatural ligament, different from the funis, tightly coiled around the *left leg*, which was enormously swelled, making a deep sulcus. Two cases are mentioned by Montgomery, where the coiling of the chord caused equally a deep dentation. It is remarkable, that in a large proportion of the cases recorded by Montgomery, &c., eight out of thirteen, the left leg was affected.) A case is recorded in Siebold's Journal, vol. xvi, No. 2, in which the umbilical chord was wound around the right leg of a three months fœtus forming a knot. The development of the limb was prevented and the leg was worn down to the bone, the integuments remaining unaltered. In a case by Dr. A. H. Buchanan, (*Am. Journ. Med. Sci.*, August, 1839,) the umbilical chord of a four months fœtus was singularly twisted about the neck and thigh, so as to impede motion and circulation. At the point of compression, only the integuments intervened between the chord and the bone; below it, the limb was fully developed. This case, had the child lived long enough, would probably have resulted in spontaneous amputation. A case, however, which proposes a different explanation of the manner in which some at least of these cases occur, is the following quoted by Andry, from the *Arch. de Méd.*, vol. xvi, p. 444. "Dr. Carus states that a woman, six months pregnant, fell on her belly; at the full time she was delivered of a thin feeble child, which had a transverse wound on its right leg, nine lines long. The edges were pale and flabby, and it passed from one malleolus to the other, involving the skin and subjacent muscles, and was accompanied by a fracture of the tibia. The body of the bone was wholly separated from the lower epiphysis and passed upwards and outwards, out of the wound. It had lost its periosteum, looked badly, and could not be returned, the necrosis increased, gangrene attacked the wound and the child died on the thirteenth day. Andry remarks, that had the child lived longer in utero, complete amputation of the foot would have occurred. I have detailed the above facts with the hope of attracting the attention of future observers to the cause of a remarkable phenomenon, which needs further elucidation.

There is yet a congenital deformity to which I must just allude I mean *club foot*, with its three varieties, Varus, Valgus, and Pes equinus, which is owing to a shortening, or contraction of certain muscles and ligaments, and chiefly the tendo Achillis, with displacement and deformity of the bones of the tarsus. This affection has of late become invested with extreme interest, owing to the successful surgical treatment adopted for its relief, and is treated of at length in the various works on Surgery and Orthopedy, but by no one so recently, or so elaborately as by M. Bouvier, in the 7th vol. of the *Mem. de l'Acad. Roy. de Médecin*, Paris, 1838, to which the reader who desires a full account of the peculiarities and pathological conditions of each kind, and of the opinions as to its cause and nature, entertained by authors of all ages and countries, is referred. Kylosis, according to Chaussier, occurred 37 times, in 138 cases of monstrosity. Craveilhier's 2 liv. contains an "anatomical examination of the

bones in club feet" with numerous plates of the conditions of the bones and muscles, &c, with remarks on congenital luxations.

A very curious case is related by Joerg, where the curve of the vertebral column was such, that the hind part of the sacrum and coccyx adhered to the posterior part of the shoulders, and the lower extremities were directed to the head, which appeared between them. The abdominal parietes were united. The mother went the full time and the fœtus could not be delivered until the adhesion of the sacrum to the shoulders was destroyed. M. Andry, from whom I copy this case, doubts whether this could occur from muscular contraction, and suggests in a similar case, a careful examination of the bones. Lankirch, (*Hist. Monstr.*) speaks of an individual whose whole body was turned back like that of a rope dancer, and, in the *Hist de l'Acad.* for 1700, a person is mentioned whose body was so twisted, as that the part which is ordinarily on the posterior, formed the anterior part. (*Dict. des Sci. Méd.*)

Absence of, and supernumerary limbs, toes and fingers, and duplicity of these organs, I shall pass unnoticed, and merely add that Paletta in his *Exercitationes Pathologicae*, states that he had seen three instances of *congenital absence of the gastrocnemii muscles*, and that in a paper in the *Med. Ch. Trans.* vol. ix, pt. ii, p. 433, Breschet details the case of a fœtus, which, among other peculiarities, presented a total absence of the nerves and muscles of the whole of the right inferior extremity, their place being occupied by a species of solid fat.

CONGENITAL AFFECTIONS OF THE INTERNAL ORGANS.

BRAIN.—Of these I shall briefly mention encephalocoele, hydrocephalus, apoplexy, and absence of the cerebral lobes and cerebellum.

Encephalocoele is a tumour of the head, in some cases covered by integuments, in others not, depending on defective, or arrested ossification of some of the bones of the cranium, generally at the back part, with protrusion of the whole, or only a portion of the cerebrum. That if the cerebellum, (parencephalocoele) is still more rare. Very voluminous tumours of this kind, generally cause the death of the fœtus in the delivery. Smaller ones may exist for years without inconvenience, and indeed have been regarded as steatomas, and operated upon. They may easily be mistaken for cephalamatoma, in the newborn child. Billard's 79th Obs. 1st ed., is one of encephalocoele through the squamous portion of the temporal bone, covered by healthy integuments. The child had also a destruction of the skin of the cranium, on a level with the left parietal bone, replaced by a depressed, smooth, vermillion cicatrix, an inch and a half long, and four lines wide. The parietal bone had in it here an oblong opening, about an inch long. A somewhat peculiar form of hydrocephalic hernia has been mentioned, in which a protrusion of the dura mater containing fluid, occurs through a point in the surface of the cranium, generally between the halves of the occipital bone, forming a pendant tumour on the back of the neck. One of these, seen by Chaussier, hung down to the loins. In the *Amer. Journ. of the Med. Sci.* vol. iv, is a case of parencephalocoele upon the occiput, in which the child lived for fourteen hours in a state of insensibility; the hernia consisted of a portion of the medulla oblongata. A great deal of corrupted blood escaped, and the brain and meninges were inflamed. The relation altogether is very interesting.

Hydrocephalus.—I shall speak very briefly, and confessedly very im-

perfectly, on those diseases which have received already, a large share of professional attention, and must refer to the works which treat expressly upon them. Nothing is better established than the fact that hydrocephalus exists in the embryo, and at birth, and it is thought by Breschet, not to depend on those causes which give rise to acute hydrocephalus. "I have often," says he, "seen apoplexies in new born children, the blood having penetrated and distended beyond measure the vessels of the brain, the meninges highly injected, and extravasations in the cerebral substance. I have often seen the brain gray, soft and almost fluid; in other cases red, white, or more dense and firm, than is natural, and finally, sometimes, the substance of this organ is so permeated with blood as to resemble a mere coagulum, but I have seldom found abundant serous collections, comparable with those which constitute one of the characteristics of hydrocephalus acutus." (*Dict. de Méd.* 2d ed.) The same author makes the remark that M. Baron and himself had often seen, in new born children, in whom the size of the cranium would not have indicated it, considerable quantities of serum, and a very imperfectly developed brain, a state always congenital. Generally, children thus affected, die in a very few days, though some individuals have attained even a very great age, as 79 years. (Golis.) Congenital hydrocephalus is a common cause of dystocia, rendering labour difficult, and often delivery impossible without puncture of the head. Yet it is not, perhaps, as common as might be supposed, having been met with by Lachapelle and Dugès only 15 times in 43,555 labours. As an accessible instance, I may cite case 68, in the 2d part of Dr. Ramsbotham's *Pract. Obs. on Midwifery*. In Cruveilhier's 15 liv. will be found a case of hydrocephalus ventriculorum, with integrity of the cerebrum. A case of what he calls "Encysted Hydrocephalus," is reported by Dr. Houston, in the *Dublin Hospital Reports*, vol. v. p. 327. In addition to enormous dilatation of the ventricles with fluid, various sized cysts existed in different parts of the cerebral substance, unconnected with the ventricles, two as large as an almond, in the site of the formix and optic thalami, two in the anterior lobe of the right hemisphere, and two on the base of the brain, distended with fluid, and lined by membrane.

With regard to its pathological conditions, hydrocephalus may be divided into four varieties: 1st. Where the brain is sound, and even hypertrophied. 2. Where there exists imperfect development of the brain, or absence of some of its parts, (hydrocephalic anencephalia, Cruv. Liv. 15. Hydrocephalus with disappearance of the greatest part of the cerebrum, and integrity of the cerebellum, annular protuberance and medulla, pl. I, fig. 1.) 3. That in which the fluid exists in the ventricles, which it develops, distends and thins extremely; and 4. That in which it lies upon the arachnoid membrane, and forms a soft fluctuating tumour, which sometimes gives way spontaneously during the passage of the head through the pelvis, as Cruveilhier has twice known to occur. The scalp, in these cases, is excessively infiltrated. The able article by Breschet, which I have cited, will furnish every information on this interesting subject, and Otto's *Path. Anat.* p. 378, contains a perfect *resumé* of all the facts known relating to this disease, with copious references.

Apoplexy.—I have, in the preceding article, quoted some remarks by Breschet relating to this disease, which has as yet received but little attention from pathologists. The 2d edition of the *Dict. de Méd.* contains an article on the apoplexy of new born children. For what I shall say, I

shall be indebted to the 15th and 17th liv. of Cruveilhier's great work. It appears from the researches of this author at the Maternité, that apoplexy is the cause of death in one-third of those who die in the progress of labour, and the constant anatomical character is an effusion of blood within the cavity of the arachnoid. It lies most commonly on the cerebellum, sometimes on both it and the cerebrum; M. C. has three times seen it in the ventricles, the spinal dura mater being equally distended. Unless the extravasation is very small, this state is never recovered from, though not always immediately fatal, and is generally considered to evince congenital weakness. Generally, but not always, it depends on the protraction of the labour; in some cases, on compression of the chord. C. details seven cases, and I hope that what has been said will induce others to investigate this subject and record the results.

Absence of Cerebellum.—This case is also contained in the 15th liv. Pl. 5 of Cruveilhier: it occurred in a girl who lived to be 11 years old. A gelatinous membrane filled the place of the cerebellum, which M. C. believes to have been congenitally absent. It is a fact opposed to the theory of Gall as to the functions of the cerebellum, that this girl was addicted to masturbation.

Atrophy of the Convolution of the Brain, (Agenesis,) may be congenital, and is oftenest complicated with hydrocephalus. I shall transcribe Cruveilhier's description of the sixth variety: "It consists in the transformation of the whole, or a portion of one or both hemispheres into a membrane of extreme tenuity, a nucleus only of the brain remaining, represented by the optic thalamus and the corpus striatum, more or less altered. It is most commonly congenital." Facts of this nature and the case of an idiot who had reached his 15th year and had the free use of his limbs, in whom both cerebral lobes were totally wanting, may be found in the *Rep. d'Anat. Path.* by Breschet. The fœtus, generally in these cases, is born with sensible deformity of the limbs, which vary in bulk according as one side or the other is affected, and are afterwards more or less paralytic. Passing inwardly we come to the

Tongue.—This organ may be altogether wanting, double, deficient in some of its component parts, too small, too large, too long and too wide; of all which I could furnish curious examples did space permit. The common congenital affection "tongue-tie" consists in the frenum being attached too far forward, so as to interfere with its movements, and requires to be divided. I am indebted to a paper contained in the 7th vol. of the *Am. Journ. of the Med. Sci.* by Dr. T. Harris of Philadelphia, which describes a most interesting and successful operation for the removal of chronic congenital enlargement of the tongue, for the information that is there published in the 1st vol. of the *Mem. de l'Inst. National*, an interesting article on the morbid prolongation of the tongue, by Lassus, in which he notices several instances of children born with this disease; some had been seen by himself, and some he had collected from Caspar Pencer and Zacharias. Dr. H. has also cited the fact that in 1695 the Society of Medicine in Stockholm assembled to examine a girl aged 10 years, who from her birth was disfigured by a protrusion of the extremity of the tongue beyond the mouth, which, as generally happens, afterwards increased much in size. *Act Litterar. et Scient. Suecæ*, vol. iii, 1732. Bartholinus (*Hist. Anat.*) describes a child whose tongue from birth was larger than those of other children, and ultimately grew to be as large as a calf's heart.

Another example is that of a female described by Percy, (*Dict. des Sc. Med.*, vol. xxvii,) which by the time she had reached her 18th year had amazingly increased; and the same article contains the very interesting case of Philip Hoenhumer, who was born with a very large tongue pendulous from the mouth, which in his 8th year materially increased and was amputated. In the old *Journ. de Vandermonde*, vol. xv, p. 156, is a case by M. Maurant, of a monstrous tongue; it adhered to the gums of the lower jaw by a spongy tumour as big as a filbert, and grew so much that ultimately no distinction could be perceived between them. The tongue ultimately became two inches thick and four fingers breadth out of the mouth, and lodged in a groove on the lower jaw; the child could chew and articulate.

Ranula.—I once, says Billard, saw a congenital ranula. When the child cried, its elevated tongue allowed an irregularly rounded, oblong, transparent, elastic tumour, on the left side of the frenum, fastened to the internal surface of the jaw, occupying exactly the place of the sublingual gland. The child left the hospital and the result is unknown.

The Epiglottis has been found absent by Morgagni.

The Glottis has been known to be obstructed and strictured by a strong membrane, produced by the mucous membrane which lines the part. The child was large and well formed, and the heart and arteries beat with force. It lived only a little while and uttered no cries. *Journ. des Prog.*, vol. iv, p. 119, Rossi, cited by Andry.

Tonsils.—Hypertrophy of the tonsils, says Andral, may exist unattended by induration. It is frequently accidental, but may be congenital.

Pharynx. Complete absence of the pharynx, as yet has been observed only in acephalous monsters. The following malformation is related by Dr. Houston in the *Dub. Hosp. Rep.* vol. v. "A male child, who died the day after its birth, having on every attempt to suck disgorged its milk with fits of suffocation, was found to have the pharynx terminate in a cul de sac some way down the neck, without having any connection with the œsophagus. The larynx was perfect, but the posterior wall of the trachea was perforated by a large opening from which the œsophagus took origin, and which appeared so smooth and oblique as to render the passage from the larynx into that tube, as direct and as easy as that along the trachea into the lung." Andral states that it has been found to terminate in a cul de sac at each of its extremities and to present a partial dilatation, in some cases constituted by all the tunics, in others only by the mucous membrane, forming a hernia through the muscular tunic.

Œsophagus.—The malformations of this organ are numerous. Sir A. Cooper has recorded a case in which it was totally deficient, the pharynx terminating in a cul de sac, and the stomach having no cardiac orifice. The child lived 8 days. Billard cites one precisely similar, occurring to Dr. Sonderland, for the *Journ. Comp. du Dict. des Sci. Méd.* In the case published by M. Martin, in the *Observateur de Sci. Méd.* Marseilles, 1825, there was no trace of the pharyngeal extremity of the œsophagus but a canal of a few inches in length, ending in a cul de sac, the trachea and stomach communicated. Dr. Blundell on the 50th page of his *Obstetricy*, mentions three cases in which the œsophagus was represented by a mere ligamentous chord. In a case by Von Cuych, the œsophagus terminated at a short distance from the stomach, and Velpeau, (*Tokology*, p. 214.) states that he dissected a fœtus, full grown, whose œsophagus on reaching the dia-

phragm, ended in a cul de sac. Meckel has figured one which bifurcated opposite the first rib, the branches continuing distinct until they arrived opposite the 6th, when they approximate, unite closely, and at last the œsophagus becomes single again. Blasius (*Obs. Med. Paris*, 4. obs. 7. p. 52,) had twice seen it double.

The only pathological condition as yet described is *Ulceration*. Billard, (in his *Mal. des Enf.* p. 288, obs. 20. 21. 2 Fr. ed.) states that in two cases in which new born children died a short time after birth, he found ulcerations of the muciparous follicles in the œsophagus and stomach, which must have been developed within the uterus, and by their progress after birth have hastened death. The second of these cases is especially remarkable. The mouth was injected, the pharynx very red, and its inner membrane rather tumid. On the upper part of the œsophagus were two almost parallel ulcerations, each about four lines long, yellow at the bottom, the edges sloping and presenting, as well as all the upper third of the œsophagus, a carmine redness. Stomach and intestinal tube very much congested, with sanguineous exudation throughout the digestive tube.

Before I proceed to a consideration of the pathological states of the organs within the abdomen, I shall cite from Lieutaud, *Obs. Anat. Med.* obs. 792, the following case from Diemberbroeck, of a congenital *Deficiency of the Diaphragm*. "Puer asthmate chronico, at frequente tussi ab incurabilis vexatus, tandem septimo anno ætatis extinguitur. Nullum reperiunt diaphragma, desiderabatur etiam medrastinum. Pulmones vero a solita forma degener, uni cum lotum præbebant.

Stomach.—The congenital malformations of this organ may be briefly stated in the following order: 1. Total absence. 2. Deficiency of a cardiac orifice. 3. Separation from the duodenum. 4. The great extremity wanting, the œsophagus entering the left. 5. Division by a central contraction into two cavities. 6. Extreme smallness, so as not to exceed the size of the small intestine. 7. Great size, so as to fill almost the whole abdominal cavity. 8. Lateral transposition in common with the other viscera, to be mentioned hereafter. 9. Considerable contraction of the left orifice, with absence of the pyloric valve. (Fleischman.)

Mons. Billard relates 15 cases in which there was every reason to believe that *Gastritis* (follicular ulcer) existed previous to birth and caused a speedy death. Several of the patients had severe lesions in other organs; one had no other than an ulceration in the stomach exactly resembling those of phthisis. Plates 3d, fig. 4, 5, 6 of the 15 fasciculus of Cruvelhier's *Anatomie Pathologique*, represent this lesion in the stomachs of children who died, one on the 8th, one on the 15th, and a third on the 30th. day. The ulcers in fig. 4, had a yellowish base and broad red edges. The inner surface of the stomach in fig. 6, is very dark, and contained it is said, much dark matter. The bottom of the ulcers is also dark, and the edges red and narrow. In the stomach represented in fig. 5, I counted thirty-three. Figures 1, 2, 3, represent the same disease, which he calls "Muguet" with pharynx; mouth, whole of œsophagus and ventricles of the larynx. Mons. Denis, in his "*Recherches Anat. et de Phys. Path. sur plusieurs maladies des enfans nouveau nés*," 1826, p. 139, has cited some cases of these follicular ulcerations. In a male child who died in a few moments after birth, the lungs were imperfectly developed, the flesh soft and infiltrated, the skin red, the stomach presenting a superficial ra-

mollissement of its mucous membrane, whitish with vivid injection; that of the small intestines equally injected and covered with a creamy exudation. A stricture existed near the cœcum and the large intestines were distended with meconium. The 6th volume of Broussais' *Ann. de la Méd. Physiol.* p. 139, contains cases of congenital arachnitis, gastritis, and gastro-encephalitis.

Intestines.—Cases are recorded in which the alimentary canal was singularly shortened, the convolutions of the small intestines being less numerous, or altogether wanting; and the length of the alimentary canal from the cardiac orifice scarcely equalling, or even falling short of that of the individual. Thus in the case of the man mentioned by Cabrol, whose stomach was so large that it filled a great part of the abdomen, the great and small intestines together scarcely exceeded the length of three feet. The gastro-intestinal canal has been found as a straight tube, which, commencing at the entrance of the œsophagus in the stomach, terminated with the rectum in its ordinary situation. The small digital appendices, called *diverticula*, by which the extent of the alimentary canal is sometimes increased, are congenital anomalies; as many as six have been found in one subject. In the 15th fas. of Cruveilhier's great work, obs. 7, in conjunction with disease of the pancreas and lungs, oblong, whitish, elliptical plates were found, with considerable thickness of the walls of the intestines. These plates were strewed with petechiæ, and in some points, the thickening was such that the calibre of the intestine seemed to be completely effaced. Dr. Francis has mentioned a case of extreme atrophy of the intestines on the 602d page of Stewart's translation of Billard. The subject of hernia I shall advert to, after some observations on the conditions met with, of particular intestines.

Duodenum.—It has been found as large as the stomach; in one case, immediately below the pylorus, it divided into two canals, which reunited at about one-third of an inch above the jejunum. (Calder. *Edin. Med. Mem.* vol. v.) M. Billard, in his most philosophical and instructive work, page 362, 2d ed., has given an analysis of the curious case, published by Dr. A. Schæfer, in which the duodenum of a child which lived seven days, was so much distended as to exceed that of an adult in size. The third part of this intestine after having passed through the meso-colon, ended in a cul de sac. It was full of a brown liquid. Its width was an inch and an half, and its length nine inches and ten lines. The rest of the canal was very narrow. The remainder of the small intestine was thirty-four inches long *by two and a half lines wide*; the large intestine twelve inches six lines *by two and a half lines*. The cœcum was two lines long, its appendix twenty-one lines. This case is contained in the *Journ. Comp. du Dict. des Sci. Méd.*, vol. 24, p. 58, and in the essay, Dr. S. has enumerated almost all the analogous cases mentioned by authors, with many learned reflections on the possible causes. M. Billard himself details an analogous case to which I refer the reader.

In a case by the same author, (2d ed. p. 390, Obs. 43,) hereafter to be again alluded to, I find the following remark: "Some transverse stricæ existed in the duodenum; in the middle of the second part of this intestine was seen a pedunculated excrescence, red and irregular like a strawberry. It was as large as an ordinary bean, and adhered firmly by its peduncle, to the surface of the mucous membrane, on which it was developed. Its

structure was spongy, but not erectile. It was easily crushed between the fingers, and doubtless had some analogy to warts on the skin."

Ileum. In the same case, it is further stated that, at the end of the ileum, existed a chronic inflammation, characterised by thickening of the mucous membrane of a very marked slate colour. In the following one, No. 44, "the wall of the intestine began to thicken near the termination of the ileum, and became more so as it approached the cœcum. The ileo-cœcal aperture was much contracted, and the valve of Bauhin, much tumefied, indurated and red. This thickening chiefly resided in the sub-mucous cellular tissue, which presented the anatomical characters assigned by Laennec to scleroma. The mucous membrane, however, also was rather thickened, very red, and in particular, very friable. Dr. Blondell, in his obstetricy, mentions that his museum contains a specimen of obstructed ileum, in which, on the gastric side of the closure, the gut is enormously distended, and on the other, much contracted. Dr. J. W. Francis, of this city, has described in the *Am. Med. and Ph. Reg.* vol. i, a case of diverticulum from the ileum, in a man aged 35, who died of enteritis. Solutions of the continuity of this intestine have also been met with.

Cœcum.—The cœcum may be completely deficient, in which case the ileum opens directly into the colon. It may be much larger than natural, or provided with a remarkably large diverticulum, or lastly, really double, presenting two large culs de sac, one of which communicates with the colon. Fleischman describes one which was completely bifurcated.

Colon.—The colon is not unfrequently remarkable for its excessive length; two have sprung from a single coecum, and reunited at the rectum, (Brugnoni,) and Meckel, in his *fas. An. Path.* has represented one simple in its origin, then separated into two cavities by a central partition, and at last, branching out into two dilated portions of unequal size which float freely in the abdomen, and end in a cul de sac. The transverse colon sometimes passes in front of the stomach, sometimes is covered by it, and sometimes has its convex side turned downwards. Littre, in the *Mem. de l'Acad.* 1709, relates that the ileum, in a case seen by him, ending in a cul de sac, the large intestine was wanting, all save a little duct three lines long, which opened by a small round hole above the pubis, and formed an *artificial anus* for the escape of meconium. The erudite Dr. Francis, in a letter appended to Stewart's translation of Billard, says "an instance came to my notice some years ago, of the small intestines, so called, being in reality the larger, while nearly the whole tract of the colon and rectum was diminished in calibre, so as scarcely to admit the passage of a crow quill. The child lived four days."

The sclerosis of the duodenum mentioned in Billard's 44th case, as affecting the ileum, involved the colon also. It is entitled "*Chronic Colitis—Sclerosis of the Colon.*"

Rectum.—This intestine is often found to end in a cul de sac, which condition may, or may not coincide with imperforation of the anus. I think it unnecessary to increase the already extended limits of this paper by references to this very common malformation. The symptoms which result from it may be found minutely detailed in Billard's 39th and 40th cases. The same author says that he saw an operation for the establishment of an artificial anus performed by M. Ouvrard of Angiers, upon an infant deprived of a rectum, whose colon ended in a cul de sac at the

upper extremity of the sacrum. "I have seen," says Baillie, *Morb. Anat.* vol. ii, page 165, "the rectum terminate in the bladder from malformation, so that there was no other external opening to the rectum, than by the urethra. The rectum sometimes ends in the vagina, but this is uncommon. A curious case of unnatural coalition between the rectum and bladder, is recorded in the Comment. Gotting. ad ann. 1778. In the 1st liv. of Cruveilhier, is the plate of a child whose anus was imperforate, and a congenital *fistulous* passage ran along the perinæum, and opened on the lower surface of the penis. It lived nine days. Having mentioned here a case of congenital fistula, and having omitted to introduce it in the proper place, I will just call the attention of the reader to the review of a paper in the *Med. Chirurg. Rev.*, April, 1834, page 481, entitled "De fistulis colli congenitis, adjecta fissurarum branchialium in mammalibus, aribusque, historia succincta. Berol. 1832," by Dr. Ascherson. Of this curious congenital anomaly, Dr. A. has seen eleven cases. On the anterior and lateral part of the neck, generally on the right side, is observed a fistulous opening, having a very narrow aperture, surmounted or not by a papilla. A probe generally penetrates but a very little way, owing to the sinuosities of the canal, but in one passed into the pharynx. Air never escaped, but the discharge was clear, viscid, or rather puriform. Rudolphi had seen the closing up one of them bring on convulsions, which ceased when the discharge was again permitted to flow.

Congestion and Inflammation of the Intestines.—It appears from the researches of Billard, that nothing is more common than to meet with more or less congestion of the mucous membrane of the intestines of new born children, especially in the plethoric, or in those who have experienced some delay in the birth; nor is this condition unfrequently attended with hæmorrhage, which, in many of those who live but a short time, becomes the cause of death. In many cases it gradually disappears; in others, ends in inflammation. Billard's 40th case is one of enteritis, accompanied by imperforation of the anus. There were pretty red patches on the mucous membrane of the stomach, general redness and tumefaction of the internal membrane of the small intestines, and many muciparous follicles, each surrounded by a circle of inflammation. M. B. briefly details the post mortem appearances in ten other cases. "It is even reported," says Underwood, "in the Phil. Trans. that Lille Van Doeveren has discovered worms in the stillborn fœtus, but this is much doubted." Andry mentions that Dolæus and Schrieter have met with bundles of worms in the intestines of the fœtus, and that Rosen (*Diseases of Children*) mentions two affected with tænia, *Abdominal Glands*. Ochler, according to Desormeaux, (*Article Oeuf. Humain, Dict. de Med.*) had found the glands of the mesentery tumefied, adipiform, hard, in short, scrofulous. Cruveilhier (*An. Path.* liv. 15, Obs. 2.) states that large, indurated lymphatic ganglia surrounded the hepatic duct in a fœtus which presented several other lesions. In two stillborn fœtuses, says Billard, I observed a very evident tubercular transformation of some mesenteric glands.

I could not fail to allude in these pages, to the curious congenital, though not pathological condition of the viscera, called *Lateral Transposition*, in which some, and generally all, occupy a position opposite to that in which they are naturally placed, the stomach being to the right, the liver to the left, &c. As it presents no practical interest, I must be very brief, and after hastily citing Dr. Baillie, refer the reader to a list of references, than

which I have not myself met with any more copious. In the first vol. of the works of Dr. B., edited by Mr. Wardrop, is a minute account of all the particulars of this phenomenon, occurring in the body of a man of 40. Dr. B. remarks that he has consulted many authors on this subject, with little satisfaction, and has only found this singular *lusus* described by Cathericus Mery and Daubenton, and in a note on page 160, states that Mr. Payne had shown him a fœtus with all the viscera transposed. Mery's case is in *Mem. de l'Acad. des Sci.* 1658, a soldier, ætat. 72, viscera, arteries and veins. Blegny, *Zoo Gallic*, June, ann. 2, obs. 9, page 129; man of 18. Riolanus (*Disq. de trans. part. &c.* 1652,) a murderer executed at Paris. Otto *Path. Anat.* page 29, note, had seen two cases of "translocation," numerous references. Parisot, *Arch. Gén. de Méd.* June, 1839, young man of 25; complete, 1836. *Med. Chirurg. Rev.* 1836, cœcum natural, spleen absent, heart malformed. *Amer. Journ. of Med. Sci.* May, 1836, (Raleigh, in *India Journal* for 1834,) complete, viscera and vessels; Nov. 1836, Warren, complete, ætat. 65. Snowden, in *Lond. Med. Gaz.* June 11, boy of 15, conformation of abdominal thoracic viscera and vessels. Blundell, *Obstetr.* page 78; Dunglison's edition, fœtus, complete, abdominal and thoracic. *Med. Chirurg. Rev.* October, 1837, Jamieson, complete, of both; absence of gastro-colic omentum and transverse mesocolon, young gentleman. Houston, in *Cat. of Coll. of Surgeon's Mus. Dublin*, page 61, B. 600, a very full description of an individual, with complete transposition of all the viscera, therein preserved.

In his second contribution to intra-uterine pathology, in the *Edin. Med. and Surg. Journ.* for July, 1839, Dr. Simpson relates some cases of *partial* transposition among the viscera of the abdomen, and endeavours to prove that in some of them, at least, the *origo mali* seems to have been a morbid inflammatory action during foetal existence. The chief among these is the displacement upwards and towards the left side, of the caput cœcum and ascending colon, cases of which have been recorded by Saltzman, Schacher, Sandifort and others, and particularly some interesting original cases by Dr. J. Reid, in the *Ed. Med. and Surg. Journ.* vol. xvi. Dr. Simpson's 30th case is one of singular morbid adhesion of the right testis, embedded in a quantity of coagulable lymph, and strongly attached to the peritoneal surface of the right iliac fossa, together with partial displacement of the intestines, particularly the caput cœcum. A great deal of coagulable lymph was effused upon various organs of the body, and the intestines were agglutinated. The descending colon assumed a peculiar disposition, and the pelvic viscera were matted together. In the 31st case, similar evidences of extensive inflammation existed. A fold of the sigmoid flexure of the colon adhered to the peritoneum on the right side of the spine, by morbid adhesion. The cœcum was in the right lumbar region. In a note on page 25, Dr. S. states that Dr. Reid had recently informed him of a case in which the caput cœcum was placed in the right lumbar region, and prevented from descending by strong adhesions of the vermiform appendix to the inferior surface of the liver. To inflammation operating during foetal life, may plausibly be attributed some of the anomalies met with in examining the bodies of infants and adults, and also some instances of arrested or deficient development, and I refer to the original memoir for the ingenious arguments by which this theory is attempted to be sustained.

To these instances of transposition, I shall add another of malposition, which, with the subject of Hernia, will conclude what I have to say respect

ing the intestines. "I afterwards," says Morgagni, (vol. ii, page 71, Amer. ed. of Cooke's translation,) "met with a more extraordinary occurrence of this nature, in the body of a female fœtus, for on opening the belly and wiping away the blood which had been extravasated, no intestine could be perceived besides part of the colon and rectum. The remainder, with nearly the whole of the mesentery, were concealed and confined under the concave surface of the liver.

Hernia.—I shall touch very briefly on a disease which is very fully treated of in works devoted to this subject, and merely advert to the fact that there are met with Congenital, Inguinal and Umbilical Hernias. The former of these is occasionally complicated with hydrocele. There is also a variety of congenital inguinal hernia, first described by Dupuytren, which forms while the testis is yet enclosed in the inguinal canal, or retained in its passage through the ring. In this case, the serous tunic, distended by abdominal serosity, stretches before the testicle and forms a pouch into which the abdominal viscera fall. The diagnosis between simple hydrocele, simple hernia, and mere lodgment of the testis, is difficult. Inguinal hernia, according to Dupuytren, is sometimes congenital in females. One case only, of *strangulated congenital hernia*, is on record. It occurred to Mr. W. H. Hunt, *Lond. Med. and Ph. Journ.* October, 1828. The operation was successfully performed, the wound healing in fifteen days. When the tunica vaginalis was incised, instead of a testicle, Mr. H. found a second serous membrane, polished and having vessels running over in a longitudinal direction, in a word, a true sac, formed by the peritoneum. This having been opened, it was seen that the hernia consisted of three inches of ileum, of a chocolate red colour, and requiring for its return a considerable incision of the ring. (Andry.) A very extraordinary congenital inguinal hernia in a girl, is mentioned by Billard in an excellent chapter on this subject. It consisted of the left ovary passing through the left ring and inguinal canal. The uterus was drawn to the left side of the bladder. The cause appeared to be a congenital shortening of the round ligament, and its being fixed more solidly to the labium major than is common.

Congenital Umbilical Hernia is less owing to a protrusion of the abdominal viscera from the belly, than to their not having entered it; its proximate cause can only be a malconformation and defective development of the anterior walls. The viscera and the portion of the peritoneum which forms the sac, lodge in the cellular tissue of the chord, which, with the sac, forms the only covering. They may be very small or very large, and all even of the abdominal viscera (Méry, *Mem. de l'Ac. des Sci.* 1716; child lived sixteen hours; the chord ending in a white, opaque, membranous sac two inches in diameter;) have been found in them. The 7th liv. of Cruveilhier's *An. Path.* pl. 5, fig. 2 and 2', contains a notice of this subject, which he considers to arise from defective development, and not from arrest. Dr. Simpson has essayed, in the article just mentioned, to adapt this theory of intra-uterine inflammation to the explanation of this phenomenon also. Congenital hernia umbilicalis must be distinguished from the eventration of the intestines previously spoken of, arising from a deficiency of the abdominal parietes, and from the accidental form so common in young children after birth. Next in the catalogue comes

Diaphragmatic Hernia, in which some or all of the abdominal viscera are lodged in the thorax, passing through a deficiency in some part of the

diaphragm. It is almost always fatal, the patients being rarely born alive, and being deficient in practical interest, I shall dismiss the consideration of the subject by referring the reader to the following sources of information: Baille, *Morb. Anat.*: Clarke, *M. C. Trans.*, vol. ii, p. 118; Anthony, *Journ. Hebd.*, Feb. 1835; Cruveilhier, fasc. 17. This case is curious. The patient was 75 years old. The left side of the chest contained the stomach, large, and some folds of the small intestines, some of which were dark and strangulated by the mesentery. C. considers this case to have been *congenital*. Murphy, *Dub. Journ.*, July, 1839; Simpson, *Ed. Journ.*, July, 1839. Dr. S. equally applies his theory to the formation of this disease, remarking that it may be formed by morbid adhesions to the lungs or pleura, of the looser abdominal viscera, which are dragged out of place by the growth of the more solid organs within the chest. "Hence," says he, "in the case by Clauder, (in *Eph. Nat. Cur.*, dec. ii, an. v, p. 193, de ventriculo in cavo Thor. situ congenito.) strong adhesions united the stomach, duodenum, pancreas, spleen, and part of the colon, to the diaphragm and pleura. Bartholin, *Anat. Rar.* cent vi, vol. 3, p. 287. Chaussier, *Bull. de la Fac.* vol. ii; death from compression of the lungs. Do. vol. v, 1825, p. 66, by Baron Campbell, *Ed. Med. and Surg. Journ.* 1821, an infant six weeks old—part of the stomach, small intestines, part of the colon, spleen, pancreas and great omentum, were contained in the left thoracic cavity; the heart and left lung were on the right side of the chest. In the *Recueil Period.* vol. ii, p. 32, is the case of a dead fœtus having a large, round herniary sac on the lower part of the epigastric region, fourteen inches in circumference, much contracted at the umbilicus, floating from side to side, containing the omentum, liver, spleen, pancreas, and all the intestines; the kidneys occupied the place of the liver and stomach. Was this a *ventral* hernia? Not having access to the work, I am not able to say. The following case of congenital *eventration* is from a quarto thesis little known, entitled *Pathologie Chirurgicale*, by M. Jules Cloquet, Paris, 1831, p. 128. "A feeble female child, born the day before, emitted a few plaintive cries. On the right side of the umbilicus existed a rounded perforation, with reddish ulcerous edges, through which a great part of the small intestines had escaped. The loop thus formed was at least a foot and a half in extent, the convolutions united in a mass by membranous adhesions, some old and some recent, evidently resulting from inflammation. The portion of mesentery which sustained this great loop adhered firmly to the circumference of the ulceration, and thus opposed any further issue of the intestinal mass. The protruded intestine was cold, greenish, full of meconium, and offered no peristaltic movements. Some parts were much dilated, others much contracted, the walls unnaturally thick and firm. The belly was depressed, and, as it were, retracted. In this child the intestines had already quitted the abdomen at the period of birth, and had no doubt inflamed because of their strangulation by the opening, and perhaps also by the unwonted contact of the liquor amnii."

Peritonitis. "This disease," says M. Billard, "is more common among new born children than has been generally supposed. I have seen in the bodies of two dead children, one aged 18, the other 24 hours old, ancient and very solid adhesions between the intestinal circumplications, and in one, the anterior convex surface of the liver adhered to the anterior wall of the abdomen. These adhesions could only be the results of peritonitis which had become developed within the uterus, and had gone through its

stages before birth. I found also peritonitis in three children who died a short time after birth, who were all fresh and vigorous. In one, the sero-purulent effusion was every where abundant and the intestinal convolutions were very red externally, and had already begun to contract adhesions. M. Billard refers to the work of M. Dugès, *Rech. sur les Mal. &c., des Nouveau Nés*, Par. 1821, for a very interesting chapter devoted to this subject, in which will be found the interesting case examined by M. Chausier, in which all the viscera were agglutinated by yellow, concrete albumen; false membranes lay upon the liver, &c., and the intestines were yellow, hard and thick.

One of the most important contributions ever made to the subject of foetal pathology, is the paper in the *Edinburgh Med. and Surg. Journ.* October, 1838, entitled, "Notices of cases of Peritonitis in the foetus in utero, part 1, by James Y. Simpson, M.D." In this most elaborate essay, which occupies twenty pages of the periodical, Dr. S. has reassembled all preceding cases, and has contributed nine from his own observation. All these children were born dead; and the autopsic examinations were recorded with extreme accuracy. To this article, every future writer upon congenital peritonitis must of necessity refer, and as the journal which contains it is easy of access, and much yet remains for me to do within the narrow limits to which I am restricted, I shall present a very brief analysis of the morbid appearances, and of some other matters it contains, and refer to the original paper for more minute particulars. Dr. S. found in the bodies of these patients, serous, or puriform effusions, an investiture of coagulable lymph, either in the form of flocculi, or membranous shreds, adhesions between the viscera, some slight, and others very firm, and lastly, complications of disease in the other organs contained in the belly, which will be mentioned under each respective head. The most common cause of this disease, Dr. S. conceives to be syphilis. No symptoms unequivocally denote its existence in utero. Its duration may be but for a few days, or much longer, and it may probably occur at any period after the fourth month. It is, of all the diseases to which the foetus is liable, the most frequently fatal; if not in utero, soon after birth. The case recorded by Desormeaux, art. *Euf Humain, Dict. de Med.* vol. 15, in which a child, born emaciated, yellow, swelled, the belly hard, tumid and tender, and the intestinal convolutions to be traced under the integuments, all announcing an intense and chronic enteritis, recovered and became healthy, is unique in the history of this disease. In addition to his own cases, Doctor S. notices that mentioned by Morgagni, *De Sed. Ep.* 67, § 17, wherein the mesentery and intestines in a foetus, were agglomerated into a small mass under the liver, and covered by a false membrane. A case by M. Véron, read at the *Royal Acad. de Med.* in 1825, in his *Obs. sur les mal. des enf.* which contains others showing the existence of inflammatory and other diseases during intra-uterine life. The peritoneum was intensely red, a deposit of coagulable lymph, about a line in thickness, on it, all the abdominal organs and intestines glued together, in one mass, and purulent effusion in the abdomen. It lived fifteen hours. M. Brachet's case in the *Journ. Gén. de Méd.* vol. cii, 1828, adhesions of the liver to the walls of the abdomen, filamentous shreds of lymph, &c. A case by Cruveilhier, liv. 15, p. 2, yellowish serum in great quantity, (ascites,) and pseudo-membranous flocculi in the peritoneal cavity. Andral, *An. Path.* vol. ii, p. 737, intestines agglutinated by very firm cel-

lular adhesions. A very interesting case by Mr. Scott, reported fully by Simpson, case 11. Ascites, puriform fluid and obvious marks of inflammation, and lastly, the case detailed by Mr. King, in *Guy's Hosp. Rep.* No. 5, "on opening the cavity of the belly in a fœtus of four months, it contained a good deal of fluid, and numerous soft flakes of matter floating in it; the intestines were in a bunch at the upper part of the abdomen. The urinary bladder much distended, and capable of holding half a pint, its coats decidedly thickened. A little behind its summit, a perforation was found, around which the vesicular tunics were attenuated; a simple fissure, less than half an inch long, and its margins thin. In this case, effusion of urine into the belly, seems to have caused peritonitis and death. The urethra was imperforate." Legouais and Dugès have met with peritonitis apparently caused by internal strangulation of the intestines.

"I have found," says Billard, "tubercular granulations in the peritoneum of a child who died four days after birth. M. Nonat communicated to the *Soc. Méd. d'Em.* the existence of a second peritoneum, concentric with the first, enveloping the small intestines as far as the ileum, in a man aged sixty, presumed to be congenital.

Ascites.—It is evident that some of the preceding cases of peritonitis were also cases of this disease, which is well known to be a common cause of dystocia. The work of M. Dugès, *Mem. sur les obstacles apportés à l'accouchement par les difformités des fœtus*, in the 1st vol. of *Mem. de l'Acad. R. de Med.* may be consulted on this subject. But that ascites will occur without being attended with peritonitis, or any other perceptible disease, will appear from the following case and dissection, very few of which, reported in detail, are, I suspect, on record. It is to be found in the old *Journ. de Méd. Chir. et Pharm.*, by A. Roux, vol. xvii, p. 180. "A woman of Charleville, falling on her belly while pregnant, became affected with strangury, and the bladder was punctured during labour. The fœtus was stillborn, and on opening its body, near a pint of water was found, as well in the belly, as in the chest and other parts. All the parts of the child, internal as well as external, were well constituted, and no where was there any disposition to mortification observable." Dr. Blundell says that Loder had found a gallon of water in the abdomen of an infant at birth.

The 4th observation in the 15th liv. of Cruveilhier's *An. Path.*, is headed "Anasarca, Ascites, Hydrothorax, and Purpura Hæmorrhagica in a fœtus of seven months, which died in twelve hours after birth." There were purple spots on the tongue and surface of the body, infiltration of the subcutaneous cellular tissue, serosity in the belly, the liver being reduced to half its natural size, some petechiæ on the mucous membrane of the intestines, and many in the muscles, pericranium and pharynx. Hydrothorax in the right pleural cavity; infiltration beneath the arachnoid; sanguineous serosity in the thoracic duct. In the 5th observation of the same work, the abdomen contained serum, and the liver was of a remarkably deep olive green, purpura, effusion into pleura and pericardium, the consequences of syphilis. In the 2d observation of the same work, in a child which died in three hours after birth, in conjunction with pneumonia, there was peritonitis and a voluminous abdomen, containing a great quantity of yellowish serum, in the pseudo-membranous flocculi in the peritoneum. The intestines and stomach were very much contracted. The latter contained a thick white mucus, analogous to the white of egg. The internal

surfaces presented a very decided punctuated redness, here irregular, and there disposed in lines.

In the *Arch. Gén. de Méd.* vol. viii, page 383, M. Ollivier d'Angers has recorded a case of encysted dropsy, hitherto without a parallel. A child, stillborn, but well developed, was born with an abdomen of immense bulk, whose thin and smooth walls allowed the transparent fluid which distended them to be seen. A very little serum flowed out when the integuments were incised. The peritoneum was uninjected. The lower part of the belly was nearly filled with a transparent tumour, formerly the great epiploon, whose laminæ were separated by a collection of serous fluid contained in their folds, in the midst of which floated two albuminous flakes. The surface of the tumour was irregularly embossed by the effect of the vessels which creep upon the surface of this serous fold, and thus formed several irregular, less extensible frena. There was a slight opacity of the posterior layer of the epiploon; the rest of the membrane possessed its accustomed transparency. The foramen of Winslow gaped widely, and it is presumable that the water which the belly contained, escaped through it. The other organs were unaltered.

Liver.—The conditions of this organ which I shall detail, are its absence, its being double, softened, indurated, lacerated, and its containing pus, granular tubercles, topi, a hard tumour, its smallness and discolourations.

The liver has been said never to be completely absent, except in cases of complete acephalia, but Dr. Kieselbach (*Amer. Journ. Med. Sci.* Nov. 1839) has placed on record a case of the kind, in a human embryo, in other respects well formed. It may be out of its natural situation, or transposed, or enter into a ventral or umbilical hernia, or it may present unimportant varieties of shape. Morgagni, Ep. 48, 55, relates the following case. "An infant was born with a tumour as big as a man's fist on the right side and a little above the navel, devoid of skin and ending in a kind of prominent border. It became gangrenous and sloughed away, and the child died on the thirty-fifth day. The liver was double; one liver occupied the usual situation, and though rather small, was divided into very long lobes. The other was large, but shapeless, and joined to the former by a thick membrane. It was annexed to the trunk of the vena portæ, but its vena proceeded below the other liver into the vena cava. It constituted the tumour; there was no appearance of a gall bladder." Billard has given no case of congenital hepatic disease. He briefly remarks that sanguineous congestion is common, and thence that the organ is sometimes of a very deep reddish black colour; that he had twice seen the liver softened and exhaling a decided odour of sulphuretted hydrogen in full grown children. He had also found small tubercular granulations. "June, 1731," says Morgagni, (*De sed.* vol. ii, page 485, Cooke's ed. Am.) "a mature fœtus, whose movements had not been felt for two days, was born dead. The viscera were so extremely soft, that not only the liver became fluid on a mere touch, but on the coat of the kidneys being divided; the substance was effused under the appearance of red poultice. Baumes, in his *Traité de l'Ictère des Enf. de naissance*, 1806, mentions that a jaundiced mother produced a child with both skin and conjunctiva sensibly discoloured. Its right hypochondrium was very prominent and hard at birth, and it died in four or five weeks. The tissues of the abdominal parietes and of all the abdominal viscera, were stained yellow. The left lobe of

the liver, which was very large, was morbidly adherent to the neighbouring parts, and softened. The right lobe was indurated, and its lower surface contained a small abscess. The ductus communis was obstructed by a yellowish viscid matter. Billard had seen two cases coincide with the Cirrhosis of Lobstein, in which there was general icterus of the integuments, and had seen in an icteric child, the tissue of the heart and pericardium, of a very decided saffron yellow colour, and the testis and thymus yellow and ecchymosed. The internal surface of the bladder, the liver, the periosteum and bones, the muscles, fat and internal and exterior surface of the intestinal tube have been coloured yellow, which tinge has been communicated to the mesentery and abdominal peritoneum, with or without external icterus. In the case by M. Breschet, mentioned under the head of Peritonitis, the liver was very red and larger than natural; its tissue was friable and softened in its enlarged right lobe; on dividing it, an inodorous, gray, reddish fluid, resembling purulent sanies, flowed from the cut surface. In cases No. 5 and 22 in Dr. Simpson's paper, there were clots of blood in the peritoneal cavity, which had proceeded from a rupture, or laceration, upon the concave surface of the liver, which was much softened, and must have occurred several days before death. A case is reported in the *Gaz. Méd.* July, 1833, by Dr. Rahn Escher of Zurich, in which a child is said to have been born with a very hard tumour of the left lobe of the liver, and which disappeared at three years of age, from the effects of a diarrhœa. In obs. 5, Cruveilhier, liv. 15, the liver was small, dense, and of a remarkable olive-green, a very singular condition coinciding with dropsy. In the 30th case, detailed in Dr. Simpson's second communication in the *Ed. Med. and Surg. Journ.* 1839, the lower surface of the right lobe of the liver was studded with numerous small, semicretaceous tubercles, and a few were found in the left lobe, some of which were imbedded two or three lines deep in the substance of the organ. I am indebted to the same erudite author for the following case from Bonetus, *Sepulch. Anat.* vol. iii, page 104. "Injicere fœtus sex mensium abortio, ad lobum infimum detectus est tumor inequalis, asper, tophorum particulis tanquam cerasorum nucleis, absque pare, tamen, plenus visu tactu que durus."

Gall Bladder.—"Absence of the gall bladder, when its canals exist, is possible," says M. Billard. Of this truth, the cases in Soemmerring's translation of Baillie's *Morbid Anatomy*, p. 140; that of Dr. Cholmeley, *Med. Trans.* vol. vi, art. 4; that by Meckel, *Man. d'Anat.* vol. iii; that of a man in the *Mem. de Med. Milit.*, vol. xx, p. 406; and lastly, that by Amussat, *Mem. de l'Acad. de Méd.* of total deficiency of the gall bladder in a man aged twenty-four, are proofs. Denis has mentioned it thrice, *Gaz. Méd.* 1831. Ollivier, in a note on atrophy of the biliary vesicle in man, *Arch. Gén. de Méd.* vol. v, 1824, has mentioned several instances. "But," continues M. Billard, in the passage above cited, "I do not know that children have been born with a complete absence of the biliary passages."—2d ed, p. 436. Yet Sir E. Home, *Ph. Trans.* part ii, 1813, has given an example of a child that fed heartily, digested well, and had regular stools, and was, nevertheless, without a gall-bladder, even a duct of any kind, leading from the liver to the duodenum. There are some other peculiarities of formation met with which I omit.

The pathological states are inflammation and scabulous concretions. "I once," says Billard, "found it evidently inflamed; its inner surface in-

Spleen.—Lieutaud gives an instance of congenital absence of the spleen, and supernumerary spleens are occasionally met with. It is also found congested, ruptured, enlarged, inflamed, simply hypertrophied, and tuberculated. Congestion, according to Billard, is the commonest congenital lesion, and he had once known it ruptured. In the sixth and tenth cases related in Dr. Simpson's paper on peritonitis before referred to, the spleen was much enlarged, had on it patches of lymph, and was morbidly adherent. "Tubercular granulations of the liver and spleen," Billard says, are not very rare. Hichad saw them in five children. In a case mentioned by Petitmengin, *Gaz. Méd.*, January, 1833, the spleen was enormously hypertrophied, and its peritoneal surface morbidly adherent. In the 11th obs. of Cruveilhier's liv. 15, the spleen was four times larger than natural.

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The preceding Bibliography might be greatly extended by references to individual cases, but this would transcend our limits. The works we have quoted comprise the principal sources of information, and will furnish the inquirer the means of ascertaining what has been done towards the investigation of the diseases of the fœtus.

I. H.

REVIEW.

ART. XII. *Elements of Pathological Anatomy, illustrated by numerous Engravings.* "In morbis, sive acutis, sive chronicis, viget occultum, per humanas speculationes fere incomprehensibile."—*Baglivi*. By SAMUEL D. GROSS, M. D., late Professor of General Anatomy, Physiology, and Pathological Anatomy, in the medical department of the Cincinnati College. 2 vols. Boston: Marsh, Capen, Lyon, and Webb, and James B. Dow, 1839, pp. 518 and 500, 8vo.

PATHOLOGICAL ANATOMY, viewed as a department of science, is of recent origin. It can scarcely be said to have had an existence before the time of Morgagni, whose great work appeared about the year 1762, and it is only within a much later period that it has been extensively and very successfully cultivated. Even as yet, but few general treatises on the subject have appeared, and of these scarcely any are accessible to our medical students, or calculated to impress their minds with a comprehensive and just view of the present condition of the science. It was, therefore, with no small pleasure that we hailed the appearance of the work before us, which we hoped would supply the desideratum to which we have alluded, and give a more general impulse to the cultivation of pathological anatomy amongst us.

Of the importance of this science, it seems hardly necessary to speak, especially to those (and they comprise a great number, probably, of the practitioners of this country), who have received their medical education under the auspices of Dr. Physick. Who, of the numerous students that waited upon his instructions, does not vividly recall the fire of his eye, and the enthusiasm displayed in every word and action, when endeavouring to enforce upon them the advantages to be derived from post-mortem investigations. A pupil of Hunter, the head of the English school of pathological anatomy, he delighted to follow in the track pointed out to him by his great master, and to lead others into the same fertile region where he had already reaped so rich a harvest. May the influence of his precepts and example long continue to be felt amongst us, and serve as a shield against the darts of sloth and imbecility; for these are the only decided and open opponents of pathological anatomy, and we resign the honour of shivering a lance with such redoubtable champions to those who may feel disposed to undertake the formidable encounter.

Others admit that numerous advantages have resulted from the cultivation of pathological anatomy, but, nevertheless, undervalue its importance, maintaining that a knowledge of the alterations of colour and consistence of an organ do not inform us of the nature of the morbid actions which gave rise to them. But if this be the case, it is, nevertheless, of no small conse-

quence to be acquainted with the seat of a disease, both as respects diagnosis and treatment. Thus, for instance, the group of symptoms formerly described under the name of asthma, are now known to constitute several distinct affections, one dependent upon dilatation of the pulmonary vesicles, another upon organic alteration of the heart, or great vessels, and others upon other distinct lesions. Now to know that a certain train of symptoms are dependent upon dilatation of the pulmonary vesicles, and another upon organic affection of the heart, &c., is to have a far more definite conception of the mode of production of these symptoms, and consequently of the method of alleviating them, than we could possibly have when unable to attach them to any particular lesion. Yet pathological anatomy has enabled us to do all this, and, consequently, has not only improved our diagnosis and treatment, but has also enabled us to advance a few steps in our knowledge of the nature of these affections. What is true of these, is true of many other diseases. Again, a knowledge of the alterations of colour, consistence, &c., of an organ or tissue, frequently throws much light upon the nature of the diseases, by means of the analogy between those alterations and others, with the nature of the morbid actions producing which we are, to a certain extent, acquainted. Thus, for instance, how many diseases have, partly by this means, been shown to depend upon local inflammations, and to be indebted for certain of their distinctive characters to the tissue, or organ in which it is seated. Admitting, however, these valuable results to have accrued, it may be objected that, on the other hand, post-mortem investigations have led to many and grievous errors; that they have been advanced to the support of the most absurd and baneful hypotheses; that slight and secondary alterations have been mistaken for primary and important ones, or even that the changes occurring after death, or in the moment of dissolution, have been confounded with positive and permanent lesions. Granting all this, to its fullest extent, where is the science against which like objections may not, or at least might not have been brought during its infancy, and before its principles are well established? How, moreover, are similar errors to be avoided in future? By relaxing our efforts, or by pursuing the subject with more attention and diligence? In a word, by studying the science superficially, or by studying it profoundly? The answer is plain, and we would not insult the good sense of our readers by farther comment, for no one will be bold enough to assert that it is better to give up the study altogether, than to take such pains as would be necessary to avoid error; nevertheless, this idea is, perhaps, not without its influence, even upon those who would be ashamed to acknowledge it to themselves. But, in truth, the liabilities of error are not so great as some would have us suppose, and it is rather matter of wonder that so much of positive and certain truth has been arrived at in a science as yet scarcely fifty years old. Many points which were matters of doubt but a few years since, are now perfectly settled, and new facts daily elicited, to an extent scarcely appreciated by those who have not kept pace with the progress of the science for the last ten or fifteen years.

Having thus shown, in a cursory manner, the futility of some of the objections to pathological anatomy, considered in its most restricted sense, let us further observe that it is by no means confined to the observation of mere alterations of colour, consistence, &c. of the solid part of our bodies. It is equally conversant with the alteration of the fluids, whether chemical or mechanical. In fine, it takes cognizance of every morbid alteration

going on in the economy, and has for its object the study of one of the three conditions, which necessarily belong to every disease. These three conditions are the cause, the changes of composition or structure, which are its consequence, and the symptoms dependent upon the latter. To investigate the middle one of these terms is the object of pathological anatomy, taken in its more extended sense. It is true that the alterations of the fluids have but lately attracted any great degree of attention, and that but little is known in reference to them, but still enough has been elicited to hold out the prospect of a rich return, as the reward of more extended research; for an acquaintance with the chemical changes which the fluids undergo, is certainly likely to throw considerable light directly upon the nature of diseased action. So far, then, from holding in slight estimation the ardent pursuit of pathological anatomy, it seems to us that, whether we contemplate the happy results of the past, or those likely to accrue in future, we can scarcely prize it too highly, or admire too much the zeal of those who are willing to devote a considerable portion of their time to a pursuit, in itself so little attractive. Of course, in attaching so great an importance to the study, we do so under the supposition that *it is conducted in connection with that of the symptoms*, so that the two may mutually throw light upon each other, and thus make us better acquainted with diagnosis and pathology, and consequently assist us in the application of our therapeutic agents. We conclude these preliminary remarks with the following just remarks extracted from the preface to the work before us:

"It is certainly an anomaly in the history of our profession, that a science, which admits of such extensive application as the present, and which may be regarded as constituting the very foundation of the grand edifice of medicine, should still be so much neglected as a branch of elementary study in the United States. This is so much the more surprising when we consider the successful efforts which have been made, of late years, for the diffusion of general knowledge, and the absolute importance, in a pursuit like ours, of availing ourselves of every source of information, whether of a direct or collateral bearing. It displays a degree of apathy, to say the least, on the part of our schools, which is alike disreputable to them as seminaries of learning, disgraceful to the American profession, whose dignity and usefulness they ought to have at heart, and injurious to the progress of medical science."

The facilities possessed in the prosecution of his subject, by the author of the work which we are now to examine, seem to have been considerable, and he has devoted four years to the accomplishment of his task, a period by no means long, when we consider the mass of materials to be collected and collated, and the various sources from whence they are to be derived. The object of the work is to supply a comprehensive view of the existing state of the science, and subserve the purposes of a text book. The better to accomplish this object, some account is given of the healthy structure, properties and functions of the different organs and tissues, a method highly advantageous to the student, as it enables him the more readily to seize the distinctive characters of the unhealthy conditions, and afford him a clear view of the whole subject, without the necessity of referring to other works. In describing the different lesions, too, our author has taken care to notice their pathognomic symptoms, by which the practical utility of the work is materially enhanced. It is divided into two parts, the first containing an account of the general principles of the science, the phenomena of inflammation, &c., the

second, and by far the largest, devoted to the history of the lesions of particular organs and tissues. In the first chapter, when alluding to the division of diseases into functional and organic, our author observes.

"Before proceeding further, however, it behooves me to explain what I comprehend by the term organic. By pathological anatomists, the word is generally employed to denote some permanent change in the textures of an organ; but, in the sense that I would use it, I would not only include under it all such lesions, but also every temporary alteration which the tissues experience when in a state of disease. The term organic will then have a wider latitude; and, as expressing the same thing, we shall often have occasion to use the word structure. If this acceptance be adopted, it may perhaps be doubted whether, under any circumstances, there can, strictly speaking, be a functional disease, or, in other terms, a mere aberration of the physiological state of a part, without some change in its anatomical elements. The question, at all events, is not settled."

Admitting this question not to be settled, still the term organic, as defined by our author, is certainly applicable to nearly every form of disease. He then proceeds:

"Bearing in mind the above definition, it may be assumed, as a general proposition, liable to few exceptions, that all organic diseases, whatever be their seat or extent, are the result of inflammatory action, either of an acute or of a chronic kind. To many, this proposition may be startling; nevertheless, if it be carefully examined, it will be found, I doubt not, to be grounded on fact. The truth of this remark will appear more evident as we proceed."

Why our author should think that the above proposition might prove startling to many, does not seem very clear. It is certainly not so from its novelty, since even the merest tyro in medicine is familiar with it, as one of the principal dogmas of Broussais. It is, we confess, however, rather startling to hear so exclusive a view reiterated at the present time, as a positive truth, when its insufficiency is maintained by most pathologists of the present day.

Our author then goes on to give a summary of what is known upon the subject of inflammation, its symptoms, &c. He enters but slightly into the discussion of the various hypotheses which have been advanced in relation to it, and confines himself chiefly to an exposition of facts, calculated in the main to give a clear view of the subject. Speaking of the phenomena of inflammation, he says:

"Most writers, it seems to me, have attached too much importance to some of them, and too little to others; whilst they have entirely overlooked the fact that they are always greatly modified by the nature of the tissue in which the malady, of which they are the indices, is located."

If by most writers is meant most of those who have written since the time of Hippocrates, the assertion will not be denied, but if, as we naturally conclude, is meant most writers of the present day, it is unquestionably erroneous, for the modification of the phenomena of inflammation, according to the tissue affected, is now so universally admitted and appreciated, as to constitute it one of the most important and prominent features of modern medicine.

Farther on, our author expresses the opinion that the term fever will ere long be entirely discarded from our books, and diseases named according to the tissues which they implicate. This supposes that all fevers will be found to have their seat in some tissue, which is yet a disputed point, and the farther pathological investigations have been carried, the

more clearly do they seem to us to show the impossibility of referring a part, at least, of the fevers commonly called idiepathic, to the lesion of any particular *organ* or *tissue* as their cause, and to render it at least probable that some of these fevers will be found to consist essentially in an altered condition of the blood, in which case we do not see how they can strictly receive their title from the tissue implicated, the blood not being a tissue. Our author exhibits a strong disposition to reduce all diseases to local inflammation, and we notice his round assertions on this head the more particularly, because we think they are calculated to convey an erroneous impression to the mind of the medical student, in reference, at least, to the general opinion of medical men. It appears to us that exclusive views upon disputed points of a general bearing, should not be strongly inculcated in a text book, unless, indeed, the arguments on the other side are freely stated, so that the student may have a fair view of the whole ground.

The terminations of inflammation by effusion of serum, lymph, &c., are treated of in successive chapters. In that on the effusion of serum, the disposition just noticed to extend the sphere of inflammation is strikingly apparent. He says that there are some varieties of inflammation in which the effusion of serum forms the chief, if not the only symptom; and farther on he observes:

"Various names are employed to designate these effusions. When the fluid is poured out into the interstices of the subcutaneous cellular tissue, it forms a smooth, pale, glossy swelling, which pits on pressure, and is seldom painful, unless there be considerable inflammation. This is called *oedema*."

Our author then goes on to define what is meant by anasarca and dropsy, and we are sure that any student, reading the passage in the connection in which it stands, would infer that all dropsical effusions were generally regarded as the result of inflammation. He subsequently observes:

"It has been already hinted that serous effusion is the result of inflammation, usually of a very mild grade. That this is true, as a general rule, very few will attempt to dispute; the exceptions, if there be any, are certainly very rare, and have not hitherto been satisfactorily pointed out. A few facts, clearly and concisely stated, will assist in determining this problem."

So far from the exceptions being rare, we find enumerated in a recent article upon the subject of dropsy, written by M. Littré, in the *Dictionnaire de Médecine*, no less than twelve different causes of dropsy, besides inflammation. Among the most common of these, are obstruction to the venous circulation by compression, &c., or to the general circulation in diseases of the heart. Speaking of those obstructions to the circulation, our author endeavours to show that they act by producing inflammation. He tells us that the absence of the ordinary phenomena of phlegmasia, after death, does not prove that it did not exist during life, but the only positive proof which he adduces of its existence, is contained in the following extract:

"The absence of redness, therefore, does not prove that there was no inflammation; for the existence of this lesion is sufficiently evinced by the presence of the watery accumulation, and the opacity of the affected membrane. Should there be, in addition, specks, patches, or bands of fibrin, all doubt on the subject must vanish."

The assertion that the existence of inflammation is sufficiently evinced by the presence of the watery fluid, and the opacity of the membrane, is, in a great measure, a begging of the question; for the cause of the presence of the watery fluid is the very point to be proved, and the opacity of the membrane may as well be regarded as a consequence as a cause. Indeed, when we consider that membranous organs generally become thickened, when subjected to distension, and that, in the case of dropsies, this thickening and opacity often exist alone, without other evidences of inflammation, we should rather be led to infer, from this very circumstance, that the opacity was the consequence of the distension. That dropsy may result from simple distension of the vessels, without inflammation, is sufficiently evident from the experiments of Majendie, which our author does not mention. This physiologist, by injecting water into the veins of an animal, and thereby distending them, and then examining a serous surface, the peritoneum, for instance, found serosity running rapidly from its surface, and a genuine dropsy produced before his eyes. The difference in the character of the fluid effused in dropsies resulting from obstruction and some other causes, and those resulting from inflammation, is also a point of importance, though not dwelt upon by our author; an instance, among many, that general theoretical, or hypothetical views, exert a practical influence for good or for evil. The difference to which we allude is this, that in cases dependent upon obstruction, &c., the fluid effused is generally limpid, whilst in those dependent upon inflammation, it is mostly whitish, milky, containing flakes of albumen, &c. So important are these characters of serum generally thought, that a perfectly limpid serum, unmixed with flakes, &c., is confidently appealed to as strong evidence of the non-inflammatory condition of the membrane of the cavity in which it was found. What are we to think now of the positive assertion of our author, that few will attempt to dispute that serous effusion is the result, as a general rule, of inflammation, and that the exceptions, *if any*, are *very rare*. On the contrary, we think that few will be disposed to admit such a proposition. Indeed, we do not see how Dr. G. could fall into so grave an error, if he had been in the habit uniformly of combining clinical observation with pathological anatomy. The study of the latter in dissecting rooms, upon subjects, the symptoms of whose diseases we have had no opportunity of carefully watching during life, is a dangerous method, capable of leading into great error and confusion, as a thorough knowledge of the symptoms, their period of commencement, succession, &c., is of the last importance in enabling us to form any correct conception of the nature of the pathological lesion.

Our author's views in relation to Dropsy, are the more remarkable when compared with those expressed in the chapter on hæmorrhage, as will be seen from the following extract.

"Although inflammation is not unfrequently attended by a discharge of blood, this is by no means the only condition in which this phenomenon is observed. In many instances it would seem to be the result purely of over distension of the capillaries, from obstruction in the heart or large vessels, by which the sanguine fluid is prevented from pursuing its accustomed route with its accustomed freedom."

So far as the distension of the capillaries and the obstruction of the circulation are concerned, this state of things is similar to that which exists

in many cases of dropsy; and how Dr. G. can admit that congestion of the capillaries may exist in one case without inflammation and not in the other, is inexplicable to us.

In conclusion, let us observe, that in treating of those conditions which may be regarded as terminations of inflammation, amongst which he includes hæmorrhage, softening and induration, our author has considered them in a general manner and not merely as connected with inflammation; a course very proper in itself, but which might create confusion in the mind of a student, as, before entering upon their consideration, he enumerates them in order, as so many conditions or terminations of inflammation. Immediately succeeding the chapters devoted to the conditions just mentioned, are those containing an account of hypertrophy, atrophy, transformations, &c., as well as the various heterologous formations, tubercles, melanosis, scirrhus and encephaloid. Most of these also, he regards as more or less dependent upon inflammation. 'Transformations he defines to be, "those changes which a pre-existing tissue undergoes, as it is being converted into another that is totally different from it, but which has its analogue in the animal economy." He then says:

"Viewed in this light, the transformations are really few in number, and may be stated as follows: 1. The cellular. 2. The mucous. 3. The cutaneous. 4. The fibrous. 5. The cartilaginous. 6. The osseous. 7. The adipous. To each of these transformations it will be necessary to devote separate consideration; and, in entering upon this duty, I shall only remark, concerning them, that they occur most frequently in old age, and that they are all effected under the influence of inflammatory irritation. How far the latter proposition is true, we shall endeavor to show as we proceed with our discussion."

So far from the bold assertion that they are all effected under the influence of inflammatory irritation being made good, we find but little in the remainder of the chapter to support it. Indeed, when speaking of osseous transformations as an effect of old age, he says:

"How far the examples of senile transformations above adverted to are influenced by, or unconnected with, inflammation, is a question concerning which we have no positive information. For my own part, I am disposed to believe that it is not altogether absent even here, although it may not be characterised by the phenomena that physicians are in the habit of ascribing to it."

We must leave it to the author to reconcile his previous assertion, with the admission that we have no positive information on the subject.

"Be this as it may, I feel perfectly convinced, in my own mind, that the transformation in question, like the cartilaginous and the osseous, indeed, like every other, is uniformly the result of inflammatory irritation. The subject, however, requires to be further investigated, and, until this be done, it will be well enough to avoid all speculation concerning it."

And *a fortiori* it will be well enough to avoid all positive assertions founded upon such speculations.

The views of Andral in reference to the nature of these transformations, seem to us to be very philosophical and correct. He considers them as the results of an altered nutrition, not necessarily connected with inflammatory action. He very logically concludes that the presence of the latter cannot be considered as necessary, since in a great number of cases, neither the causes, symptoms, nor post mortem appearances give evidence of it.

In the two chapters immediately succeeding that on transformations, is contained an account of hydatids and serous cysts. The description of

some of the species of hydatids is illustrated by several wood cuts, representing the form and structure of these animals, of which our author has had the opportunity of seeing a considerable number. He says, that of the large number of hogs annually slaughtered at Cincinnati, probably not a tenth part are free from the disease.

The remainder of the first part of the work is devoted to the consideration of the heterologous formations, viz. tubercle, melanosis, scirrhus and encephaloid. In the chapter on tubercle, we find the following observations in reference to the consistence of tuberculous matter as originally deposited.

"The chemical, physical, and anatomical characters of this matter, all conspire to show its similarity with the coagulating lymph, as it is revealed to us upon the free surface of the serous and mucous textures, in the various splanchnic cavities, upon the surface of a recent wound or a granulating ulcer, and finally upon the surface of the crassamentum of blood taken from persons affected with inflammation. From the well-conducted researches of Dowler, Gendrin, and Bretonneau, it clearly appears that the substances found in these different situations are all composed essentially of albumen, fibrin and gelatine, in varying proportions, there being sometimes a predominance of the one, sometimes of the other. The similarity, then, of these morbid products being admitted, as unquestionably it must, who will contend that the tubercular matter is ever deposited in the solid form?"

The justice of this conclusion does not appear to us to be so evident, even admitting the premises, for upon the same principle we must admit that most of the tissues of which the body is composed are not deposited in a solid form. Their elements undoubtedly exist in a liquid state, but at the moment of deposition, become more or less concrete, constituting what we call solids, in contradistinction to the fluid parts of our bodies. We can conceive no reason then why tubercles may not in the same sense be said to be deposited in the solid form, and whether they are so or not is a mere question of fact, to be settled by direct observation. Now, tuberculous matter in its early stage usually presents itself to us in a more or less solid form, and, as is observed by Andral, its original deposition as a liquid is a point not yet satisfactorily shown. We have introduced the above extract from the work before us more especially for the purpose of calling attention to the assertion of our author, that the similarity of tuberculous matter and coagulating lymph *must* be admitted, at the very moment that he quotes the name of Gendrin, who tells us that the matter of tubercles is not at all identical with that which results from inflammation. According to him, tuberculous matter appears to be nothing more than coagulated albumen, with an excess of alkaline salts, presenting no trace of globules, and incapable of organisation. It is true our author does not admit two at least of these distinctions, and tells us that Dr. Hecht, of Strasburgh, has found tubercles to consist of nearly equal proportions of albumen, fibrine and gelatine, a result which he acknowledges to be strikingly at variance with that of Thenard, and which in the face of such authority and of the generally received opinions of medical men, we do not feel obliged to admit without further investigation.

Alluding to the different opinions which have been advanced in reference to the nature of tuberculous matter, our author says:

"Sylvius de la Boe, whose works were published towards the close of the seventeenth century, imagined that they were nothing but lymphatic ganglions,

which, scattered every where through the parenchymatous structure of our organs, were rendered morbid by the effects of inflammation. This opinion was afterwards adopted, and more fully illustrated by Wepfer and Morton, and, strange as it may seem, it has received the sanction of the great Broussais, and several other distinguished authors of our own day."

In his commentaries on pathology, published in 1829, Broussais has asserted most expressly that he entertained no such idea, and makes several extracts from his previous publications to show that he has been misrepresented on this point, and that he is far from regarding phthisis as uniformly dependent upon engorgement of the lymphatic ganglions. He considers tubercles as dependent upon inflammatory irritation, an opinion which we need hardly say is adopted by our author, who further observes that,

"The inflammatory origin of these deposits is also maintained by Andral, Lombard, Alison, Ravire, Roche, and Sanson. Louis, on the contrary, supposes that irritation, although it may occasionally exert an influence of this kind, produces no such results in the great majority of cases. Dr. Stokes, again, refers the tubercular matter to a lesion of nutrition, generally brought about by local excitation. The views of this eminent physician do not therefore differ much, if at all, from those of the above pathologists."

Immediately afterwards he quotes an expression of Andral, in which this author attributes the deposit of tubercles to a *modification or perversion of secretion, often attended or preceded by an active sanguineous congestion*. These expressions of Andral are very far from an admission of the inflammatory origin of tubercles, and in attributing such an opinion to him our author has certainly not done him justice. At the same time that M. Andral admits that the secretion of tubercle is in a great number of cases preceded by sanguine congestion, he tells us that in others there is no proof that it is so, and that irritation is not a necessary cause of their production, and alone cannot account for it. In his course on internal pathology, recently published by one of his pupils, he expressly cautions them against falling into the excess of always attributing phthisis to inflammation, which he says, would be equivalent to attributing "every morbid state to a sthenic or asthenic condition," and that "science is too far advanced in the present day to admit only these two causes of disease." The arguments brought forward by M. Louis in favour of the non-inflammatory nature of tubercles, though perhaps he has carried his view to an extreme in certain points, are in the main unanswerable. The less exclusive views of Andral, however, are perhaps more correct in a practical point of view, for he takes care to dwell upon the influence of sanguine congestion as an occasional cause, which on the other hand Louis is too much disposed to depreciate.

Tubercles are generally regarded as products incapable of organization, but on this point our author expresses a different opinion, thinking that they are sometimes capable of organization. He says, that within the last two years he has examined not less than six specimens of organized tubercles, taken mostly from children under twelve months of age. Similar exceptional cases have been observed by others, and the sanguine vessels here observed are supposed by Andral to belong to a portion of the proper pulmonary tissue *imprisoned* between contiguous tubercles; for never, he says, do we find any trace of vascularity in a simple tubercle. Whether as a question of fact or deduction, we do not see that our author has thrown any new light upon the question, and consequently we think he has very slender grounds for the opinion that tubercles are capable of organizations.

We pass over the chapters on melanosis, &c., and proceed to the second part of the work, or that devoted to special pathological anatomy, which commences with an account of the blood. Our author is not an exclusive solidist, but appreciates the zeal recently shown in the investigation of the morbid changes of the fluids, and more particularly the blood. After describing the healthy characters of this fluid, he notices the most prominent of its lesions, and as regards some of them, as the buffy coat, milky serum, &c., he enters into considerable detail, but scarcely notices or entirely omits some of the most recent investigations on other forms of diseased blood, as for instance, the very important experiments of *Donné* upon the presence of pus in the blood, the mode of detecting it, &c., and the very curious observations of *Ollivier* upon the spontaneous development of gaseous fluid in the blood, and its accumulation in the heart as a cause of death. Some account of these and perhaps other researches, with a notice of their bearing upon the pathology of certain diseases, would have probably added materially to the interest of the chapter, and enabled the student better to appreciate the importance of the subject, and the character of the researches at present going on in reference to it.

In looking over the chapter now under consideration, we were particularly struck with the following opinion, not because it may not prove to be correct, for the question we think must be looked upon as altogether unsettled, but because it seems completely at variance with one previously expressed.

"Professor *Andral* has cited numerous cases in which the blood not only contained the different elements of the secreted fluids, but likewise a variety of other accidental products, such as pus, entozoa, and encephaloid matter. In whatever way these substances may gain admission into the vessels, or in whatever mode they may be there developed—and concerning which I do not feel disposed here to speculate—certain it is, that, by combining with the blood, they not only vitiate it, but sometimes completely alter its physical, chemical, and vital properties. From the recent observations of some of the English and French anatomists, little doubt can be entertained that the elements of what are termed the heterologous formations, have their origin in the circulation, and that they are deposited subsequently in the various organs and textures, like other substances, by a sort of perverted action, induced by their presence."

Compare with this the following sentence in the chapter on tubercle.

"After much reflection, however, upon the subject, and from careful and repeated examinations of tubercles in different organs of the body, in different individuals, and in different stages of their development and growth, I am constrained to believe that the heterologous formations are originally nothing but a species of coagulating lymph, thrown out as an effect of inflammatory irritation, and modified in its character according to the tissues in which it is deposited."

With the following observations of our author at the conclusion of the chapter, we cordially unite, and if he would more carefully examine their bearing upon some of his views previously noted, we think that he would at least express himself in reference to them with more caution, and qualify and limit them in such way as to be more in accordance with certain classes of facts, the importance of which he is evidently fully willing to admit.

"From the facts that have been presented on this interesting subject, it cannot be doubted, I think, by any one who duly and impartially contemplates it, that

the blood is a fruitful source of disease, or, in other words, that it is susceptible of various morbid impressions, of which, in many instances, it is the primary and original seat. Considering the vast surface from which the chyliferous vessels imbibe the nutritious matter, and the heterogeneous nature of our food and drink, it is highly probable that the elements of disease may thus readily find their way into the current of the circulation, and establish a prejudicial action in the solids, by which they in turn are disordered, and thrown into commotions incompatible with the harmony and well-being of the general system or of some of its numerous members, tied together as they all are, figuratively speaking, by the closest consanguinity."

In the second chapter the cellular texture is treated of, in the next the adipous, and so on with the different textures and organs of the economy. It would be unnecessary to allude particularly to all these. Each chapter commences with an account of the physical properties, structure, &c., of the particular part of which it treats, after which the principal lesions to which it is subject are described. The descriptions of both the healthy and diseased structure are accompanied in many instances by a number of wood-cuts in the margin, calculated materially to assist the student.

The chapter on the skin is quite full, and contains a short account of the different diseases of the skin, regularly classified and arranged. In drawing up this abstract of their history, our author has made a singular mistake in reference to one disease, which we notice more particularly, as it is becoming quite common amongst us, and is important practically. He says:

"The term *porrigo* is applied to a chronic inflammation of the skin, essentially contagious in its nature, and characterised principally by the appearance of its scabs, which are of a bright yellow colour, very dry, thoroughly adherent, and of a circular shape, with a central, cup-like depression, and thick, prominent, and inverted edges. The most usual seat of the disease is the scalp, from whence, however, it often extends to the forehead, temples, chin, eyelids, and other regions, until, in some instances, it covers almost the entire body. Occurring indifferently in both sexes, at all seasons of the year, and at all periods of life, it is most common in infancy and childhood, and is always of indefinite duration, lasting at one time only a few weeks, at another a number of months, and, in a third series of cases, perhaps several years. Alibert describes five varieties of *porrigo*, Willan not less than six. These divisions are certainly uncalled for, as they differ from each other merely in the intensity of the diseased action, its location, and the distribution of the pustules. The mildest form of the eruption, and one which is extremely common in this country, affects the head and face of infants, and is usually known by the name of *crusta lactea*."

Most writers admit the unnecessary division and confusion which exists on the subject of *porrigo*, and our author seems to have misunderstood their criticisms, and supposed that they regarded them all as one and the same disease. So far is this from being the case, that some of the affections called *porrigo*, amongst which *crusta lactea* is one, are so entirely distinct from the proper *porrigos*, as to be placed by some in a different order, and ranged with the *impetigos*, from which they do not essentially differ. On the other hand, the *porrigo scutulata*, as also the *porrigo favosa* of Cazenave, (not of Willan,) form a separate division altogether distinct, and to which the description of *porrigo* given by our author, alone properly applies. The characters of these two are so marked, that Cazenave says it is impossible to confound them with *porrigo larvalis* or milk crust, the latter differing from them in not being contagious, in the absence of the peculiar kind of scab which is so characteristic of them, in never giving rise to permanent baldness, &c., and also in the mode of treatment.

Of the various alterations of the nervous system, to which the eleventh chapter is devoted, arachnitis, encephalitis, softening and apoplexy, are most particularly dwelt upon. In arachnitis, "the pia mater," we are told, "is almost always affected first." On account of this intimate connection between the inflammation of the two membranes, the disease is most commonly described under the title of meningitis.

"All parts of the arachnoid do not seem to be equally susceptible of inflammation. The portions most frequently implicated are those in the ventricles of the brain, on the convexity of the hemispheres, at the base of the cerebellum, the junction of the optic nerves, the Varolian bridge, and, lastly, at the internal flat surface of the hemispheres. Such, at least, is the result of my own observations, corroborated by that of some of the most distinguished pathologists of the age."

By placing the ventricles first, our author might be supposed to intend to convey the idea, that the membrane lining them is more liable to inflammation than that of any other part. But such a view would be in direct opposition to that of the most distinguished pathologists of the age, by whom it is generally admitted that the evidences of inflammation are most frequent on the convexity of the hemispheres, and that the ventricles are among the parts less often affected. The following observation is equally obnoxious to the same criticism:

"The redness of the arachnoid is usually limited in its extent, being restricted to a few points on the convexity of one or both hemispheres, at the base of the brain, or between the lobes of the cerebellum. Occasionally, when the inflammation is very intense, the redness occurs in pretty large patches."

Undoubtedly redness is mostly more or less circumscribed, but still cannot, with propriety, be said to be restricted to a few points, unless by point is meant a space as large as the anterior, middle, or posterior portion, for instance, of the convexity of one of the hemispheres. Such an extension of the meaning, however, the context will not admit of, as these *points* are expressly distinguished from *pretty large patches*. In the treatise of Parent-Duchatilet and Martinet, on arachnitis, page 68, it is, indeed, said that most commonly the redness of the arachnoid "is limited to some parts (*points*) of the convexity, or base of the brain; sometimes it occupies the whole surface of a hemisphere," &c.; but it is evident that the French word *point* must here be understood as a *part*, or *portion*, in contradistinction to the *whole surface* of the hemisphere. Thus interpreted, it is in exact accordance with what is stated by Andral, (Cliniq. Med. p. 151.)

Having mentioned the opacity and thickening of the arachnoid, he goes on to speak of the characters of the effused fluids, their situation, &c., all which are carefully and fully described, if we except his not alluding to the existence of tuberculous granulations. The characters of chronic arachnitis, and particularly of hydrocephalus, as one of its consequences, are next noticed. Dr. G. seems to regard chronic hydrocephalus, whether congenital or not, as always dependent upon arachnoid inflammation, an opinion entirely at variance with that of Breschet, who, in a very elaborate article on this subject, in the *Dict. de Médecine*, vol. xv, p. 540, tells us that one form of it is uniformly dependent upon original malformation, and that it is only in that form in which the water is contained in the cavity of the arachnoid, between the dura mater and brain, that it can be regarded

as dependent upon the inflammation in question. At the conclusion of our author's account of hydrocephalus, we find the following passage:

"Not unfrequently, the free surface of the arachnoid is roughened with minute *tubercles*, varying from the size of a clover-seed to a common currant. Their most usual situation is the lateral ventricle, the fissure of Sylvius, and the interval between the lobes of the cerebellum. No part of the membrane, however, seems to be exempt from them. These little bodies, which are generally of a whitish, semi-transparent appearance, are of an irregularly rounded shape, and of a dense, fibro-cartilaginous consistence: oftentimes, they occur in thick clusters, and are surrounded by a yellow, concrete substance, the intervening portions of membrane being opaque and milky. Tubercles of the arachnoid almost always co-exist with tubercles of the lungs or of some of the other organs: they are seldom met with in adults, but are sufficiently common in children under three years of age."

Our author may not have intended the above remarks to apply exclusively to chronic arachnitis, but they certainly seem to do so, from the connection in which they stand. Now, whatever future observations may discover to us, as regards the connection of tuberculous granulation with chronic hydrocephalus, it is undoubted that it is to the acute form of arachnitis that they especially belong, in connection with which, as we have before remarked, they have not been once mentioned. Independent of this circumstance, however, Dr. G.'s description of the lesion is far from accurate, for he states that they have their seat on the free surface of the arachnoid, whilst those writers who have recently examined this subject with the greatest care, inform us, on the contrary, that they are found *beneath* this membrane. A similar remark applies to his assertion that their most usual situation is the lateral ventricle, since they have rarely been met with there. In the assertion that these bodies are seldom found in adults, but are sufficiently common in children under three years of age, our author is again at variance with high authority upon this subject, M. Guersent, who, in his article on meningitis, in the *Dict. de Médecine*, tells us that tuberculous meningitis is most common *after* the age of three years, and under fourteen. Thus, of eighty cases which he analyses with reference to this point, four only were under three years of age, forty-two between three and fourteen, whilst the remainder, thirty-four, were over fourteen years of age.

It is a little surprising too, that in the paragraph quoted our author should not have alluded to our townsman Dr. Gerhard, who, in conjunction with Dr. Rufz, has taken the lead in the recent discoveries upon this subject, and to whom we are especially indebted for the establishment of the proposition alluded to near the conclusion of the paragraph, viz. the co-existence of tubercles of the arachnoid with those in other parts of the body.* The researches of Drs. Gerhard and Rufz have given rise to the division of meningitis into two kinds, viz. that which is dependent upon tubercles and that which is not so, a division which is beginning to be generally admitted and is of decided importance, as the two forms of disease are different in their symptoms, prognosis and treatment. Under these circumstances, it is really astonishing that in a work professing to give a view of the present state of the science, no notice should be taken of the subject except what is contained in the paragraph in question. Placed as it is, indeed, at the conclusion of the remarks upon chronic

* See Dr. Gerhard's Memoir in No. 27 of this Journal.

arachnitis, we might doubt whether the appearances of tuberculous meningitis were therein intended, were we not told that the tubercles in question were minute, and oftentimes occurred in "thick clusters," and "surrounded by a yellow concrete substance," &c.

After giving a short account of the symptoms of arachnitis, Dr. Gross concludes the subject of the cerebral envelopes by a slight sketch of the alterations of the pia mater. This membrane, he says, "on the whole is *not often* diseased," but adds, that "in arachnitis it is *not unusual* to see its substance inflamed," whilst at page 433, when on the subject of arachnitis, he tells us that it is remarkable in that disease that "the pia mater is *almost always* affected first." These trifling contradictions, calculated to embarrass a student who reads with attention, might readily have been prevented by greater care in the compilation of the work and more attention to precision.

It would lead us too far to enter minutely into the history of the other lesions described in the chapter before us, but we cannot omit noticing a passage in reference to softening of the brain, as a striking instance of the looseness with which some parts at least, of the work, have been compiled. Speaking of the intimate character of softening the brain, and of the different opinions of authors in reference to this subject, he says:

"Dr. Rostan, who has written a most able treatise on this affection, considers it as a mode of disorganisation very similar, in its essential features, to senile gangrene. He supposes it to be an effect merely of inflammatory irritation, referring, in support of his doctrine, to the various phenomena which are exhibited during life, as well as to the appearances which are revealed after death."

Now Mr. Rostan, although he admits that softening of the brain is sometimes inflammatory, expressly tells us in the second edition of his work, p. 169, "that new and very numerous facts confirm entirely his first opinion, that there exist a multitude of cerebral softenings, which are not the result of inflammation." Mr. Rostan indeed devotes the greater part of the chapter on this subject to the proof of this opinion, and to showing the absurdity of that which supposes that the lesion in question is always inflammatory. Such an opinion he regards as one of those errors which are exclusively dependent upon an incapability of logical deduction, the consequence of defective preliminary studies, on the part of those who have endeavoured to uphold them. In a word, he admits that inflammation of the brain sometimes results in softening, but ridicules the idea of hence concluding that softening of the brain is always inflammatory. It is true he thinks that the lesion is often analogous to senile gangrene, but not on that account *an effect merely of inflammatory irritation*, but rather dependent upon ossification of the vessels, consequent *not* upon "inflammation, but advanced life."

The first and second chapters of the second volume are short, and contain an account of the thymus and thyroid glands, whilst the third is devoted to the respiratory apparatus. The lesions of the air passages, acute and chronic laryngitis, bronchitis, &c., are first described, a considerable space comparatively being devoted to the account of a morbid alteration hitherto but little studied, and which was first described a few years since by M. Reynaud, viz., obliteration of the bronchial tubes. Obstruction of these tubes is sometimes dependent upon external pressure, the presence of foreign bodies within their cavities, &c.; but a frequent class of obstruc-

tions, according to M. Reynaud, and that to which his memoir is especially devoted, consists in an obliteration of these tubes by a "coarctation" of their walls and their transformation into solid cords. Of the causes of this lesion he says he can scarcely form a supposition, ("c'est à peine si j'en soupçonne les causes;") but our author, with his usual decision, cuts the Gordian knot, and tells us that all these cases not dependent upon external pressure, or the existence of accidental products within the tube, are the result of inflammatory irritation. This decision seems to be founded upon the kind of reasoning so much condemned by M. Rostan, and to which we have already alluded, and resolves itself into this, that because inflammation of certain tubes gives rise at times to their contraction and obliteration, therefore these latter lesions are *always* dependent upon inflammation. This kind of reasoning, to a greater or lesser extent, is unfortunately but too common in medical writings.

Having finished the lesions of the bronchial tubes, our author proceeds to give a short account of the structure of the lungs, and afterwards to describe the morbid alterations of structure to which they are subject, as well as some prominent points in the general history and symptoms of these alterations. In describing pneumonia, he makes no mention of the lobular variety as distinct from the common form, an omission the more striking, as *lobular* differs very materially from *lobar* pneumonia, not only in its anatomical characters, but also in many other points of its history. Thus, whilst ordinary pneumonia when unconnected with tubercles is almost always confined to one lung, the *lobular* variety on the contrary is, we are told by Dr. Gerhard, almost always double; the latter too is rarely complicated with pleurisy, is most frequent in children under six years of age, and presents other very decided peculiarities in its course and symptoms. It is perhaps from not attending to the different anatomical characters of these two forms of pneumonia, that our author has been led into the following singular error. Speaking of the second stage, or that of hepatization, he says:

"It is asserted by many that the pulmonic tissue, when thus hepatized, is specifically heavier than water; but, although I have frequently tried the experiment, I have never witnessed the circumstance, and feel inclined, therefore, to regard it rather as an exception than as a general event."

That a portion of lung completely hepatized is specifically heavier than water, or in other words will sink in it, is a fact so frequently verified by daily experiment, as to leave no doubt of its general truth. In lobular pneumonia, however, the solidification throughout the greater part of the affected portion is commonly much less marked than in ordinary pneumonia, and of course a section of it is less likely to sink in water. In the epidemic of pneumonitis, which occurred at Cincinnati in 1836-7, our author tells us that the greatest number of persons affected, were children under three years of age, and we may therefore suppose that his experiments were chiefly made upon the lungs of infants; and, as he does not seem to be aware of the peculiarities of the disease when occurring in persons under six years of age, he may in this way have fallen into the error in question. It is indeed possible that he may have so far mistaken the meaning of authors upon this subject, as to suppose they mean that the entire lung, in which the disease has passed to its second stage, will sink in water, instead of a section of that part only (for rarely is a whole lung in this state) which is properly hepatized. Of course it is the latter

only, when separated from the rest, which is regarded as specifically heavier than water.

In connection with the different stages of the disease, Dr. G. notices some of its prominent symptoms and physical signs. His idea in reference to the mode of production of the *bronchial* respiration, strikes us as quite original, for he tells us that "it seems to be caused by the air *striking forcibly against the mucus* in the larger bronchial tubes."

The termination of pneumonia by abscess is well described. Gangrene, chronic pneumonia and oedema are next treated of. Emphysema he divides, as usual, into two kinds, viz: vesicular and interlobular, but tells us that the common impression that the latter when compared with the former is a most rare disease, is erroneous. Vesicular emphysema was first described by Laennec, since when, the most important work on the subject is that published by M. Louis a few years since, in which he shows the great frequency and importance of the disease, and establishes its diagnosis with rare accuracy. Of these investigations of M. Louis our author takes no notice; and indeed, had he been well acquainted with them he would hardly have told us that vesicular emphysema, whether existing in both lungs or confined to one of these organs, "seldom involves a very large amount of tissue," since in eighteen cases out of forty-two observed by M. Louis, it was found general throughout both lungs. By an acquaintance with the treatise in question, our author might have improved very much his account of the disease; and his not having done so, is an instance among many others, of his work being decidedly in arrear of the present state of the science.

Interlobular emphysema Dr. G. defines as consisting "in the diffusion of air through the areolar texture, in consequence of the rupture of some of the pulmonary vesicles." He thus describes it:

"When a lung is thus affected, the diseased part is easily recognised by its peculiar whitish appearance, which contrasts singularly with the red-colored textures around it. It distinctly crepitates under the pressure of the finger, the contained air being readily pushed from one place to another, and the serous covering of the viscus appears, as in truth it is, to be lifted off from the parenchymatous substance. In this way, I have repeatedly known thin, flattened bags to be formed from two to three inches in length, by six or eight lines in breadth, and as perfectly pellucid as the most delicate soap bubble. In other instances, the pleura is raised into little globules, so closely clustered together as to bear a strong resemblance to a string of pearls. But whatever may be the form or extent of the elevation, the parenchymatous texture beneath is always more or less lacerated, of a pale color, and generally reduced, especially in cases of long standing, to a sort of net-work, consisting solely of vascular and bronchial ramifications."

Interlobular emphysema is generally regarded as a rare disease, but our author on the contrary is disposed to believe that it is "exceedingly common" in the western states. By referring to his description, however, it will be observed that he alludes particularly to the air being beneath the pleura lifting it up, and being readily pushed from one place to another, whereas by a reference to Laennec or Hope, it will be seen that the essential characters of the disease as understood by them, depend upon an infiltration of air into the interlobular septa, thus forming transparent bands which either traverse the lung completely from one surface to the other, or at least penetrate deeply into its substance. The formation of movable air-bubbles beneath the pleura are described by both Hope and Laennec

as a mere complication, common both to the interlobular and vesicular forms of the disease. This sub-pleural infiltration, considered as an *attendant* upon vesicular but without presenting the characters which he considers as belonging to interlobular emphysema, is described by Laennec at page 280 of the third edition of his treatise on auscultation. For these reasons and others which it is hardly worth while to enter into, it seems to us not improbable that our author and the writers in question are somewhat at variance in reference to what constitutes, strictly speaking, interlobular emphysema, and hence we may readily reconcile their discordant statements as regards the *frequency* of the disease. We feel the more disposed to take this view of the subject, because there can be no doubt of the general rarity of the interlobular emphysema properly so called, unless it may be in a form so exceedingly slight as to be scarce worthy of notice and incapable of giving rise to any appreciable symptoms, and on the other hand there seems nothing in the admitted causes of the disease which would be likely to render it materially more frequent in the western states than elsewhere. It is uniformly granted we believe, that the most frequent cause is, as stated by Dr. G., "the forcible and prolonged retention of the air during severe muscular efforts, as in lifting heavy weights, in parturition, in whooping-cough, croup, and other affections of the respiratory passages." As these conditions are of pretty uniform general prevalence, and by no means peculiar to the western states, it seems unlikely that a lesion principally dependent upon them, should be so "exceedingly common" there, and so rare elsewhere. At any rate, before we admit its great frequency there, we must have such a description of the lesion as will leave no doubt as regards its character.

Apoplexy of the lungs is next treated of. Our author seems to follow Laennec, in admitting the connection between this disease and certain forms of hæmoptysis. That the two occasionally occur together, is undoubted, but that this is often the case, or that pulmonary apoplexy is to be regarded as a frequent cause of hæmoptysis, subsequent observations have rendered very doubtful. Thus Louis is of opinion that hæmoptysis rarely depends upon the hæmoptioc engorgement of Laennec, and tells us, in a note, page 72 of his recent work on yellow fever, that, with two exceptions, he has never observed this connection between the two. Our author tells us that the blood, in pulmonary apoplexy, may be "a simple exhalation," or flow "directly from a lacerated vessel." As an instance of the latter, he goes on to mention the case of a man who had died about twelve hours after the attack, in which he must have lost nearly a gallon and a half of blood, which was found, after death, to fill the trachea, bronchia, &c., as well as "a large tubercular excavation in the upper lobe of the right lung, capable of holding five ounces, and from which the hæmorrhage proceeded." How far such a hæmorrhage was probably dependent upon pulmonary apoplexy, properly so called, we leave our readers to judge.

The section on diseases of the lungs concludes with a full and satisfactory account of pulmonary phthisis, which Dr. G., in common with most modern authors, considers as exclusively dependent upon the presence of tubercles. He coincides with Carswell and others, as regards the general seat of these deposits, and says that his own observations have fully convinced him that, in the majority of cases, they are secreted by the mucous tissue of the lungs, instead of being poured into the interstitial cellular substance. He goes on to describe some of the changes which the tuberculous matter un-

dergoes, the condition of the neighbouring parts, the formation of caverns, &c. Of the cicatrization of the latter, he has had an opportunity of observing a considerable number of instances. Speaking of the most frequent seats of tuberculous matter, he says:

"Having thus briefly spoken of the localization of phthisis, let us inquire, in the next place, whether tubercles ever exist in any part of the body without being at the same time present in the lungs. This is a question which I should scarcely deem it necessary to discuss, were it not for the extraordinary assertion of Dr. Louis, that he has never, in a single instance, seen an organ affected with these bodies independently of the pulmonary tissue. Their existence in the respiratory organs seems, says he, to be a necessary condition, a sort of *sine qua non*, for their development in other structures. In reading this portion of his work, one would scarcely suppose that the author was in earnest; yet such is really the case. His experience upon this subject is certainly at variance, in a very high degree, with that of some of the most distinguished pathological anatomists of the present day, as Laennec, Andral, and Lombard. All these writers positively declare that they have repeatedly witnessed tubercles in various organs when none existed in the lungs; and my own observations tend precisely to a similar conclusion. In a boy, four years old, whom I examined two years ago, a number of tubercles existed in the liver, but not a single one in the lungs; and in a child of twelve months, which I opened, last autumn, for Dr. Woodward, of this city, although the spleen was literally crowded with these bodies, none could be detected in the respiratory organs. Similar phenomena were noticed last summer, in dissecting the body of a man twenty-eight years old. In this case, notwithstanding the closest scrutiny, the lungs were found perfectly free from tubercular matter, whilst the lymphatic ganglions of the abdomen, the right kidney, and the seminal vesicles were absolutely filled with it."

Now so far from M. Louis having said that he never had found an exception to the law in question, he expressly tells us* that he had found one in the case of a person who had died of typhoid fever, and in whom the mesenteric glands contained tuberculous matter, although there was none in the lungs. In the series of cases which form the basis of his work, however, he did not find a single exception. It is also important to observe that this series of cases consisted exclusively of *adults*, and of course the conclusions obtained by their analysis, are not to be regarded as necessarily applicable to *children*, in whom the laws of tuberculous development are confessedly very different. The law announced by M. Louis, then, amounts to this, that, in adults, with very few exceptions, tubercles exist in the lungs, if found in any part of the body, and we have yet to learn that either Andral or Lombard have materially invalidated its truth. We are not aware, indeed, that either of these gentlemen pretend to deny it. Andral, we are sure, differs from M. Louis only in thinking that the exceptions are rather more numerous, a circumstance which, perhaps, may in part be accounted for by his not admitting gray granulations to be tuberculous. Our author's own observations certainly do not invalidate the truth of the law, for of the three cases which he mentions, one only is an exception, as the other two do not bear upon the question, the subjects of them being children. It seems, then, that the experience of our author, although he regards the assertion of M. Louis as so "extraordinary" that "one would scarcely suppose" he "was in earnest," is strikingly in accordance with it, so far as he has given us any positive facts to judge from, he having, like M. Louis, found a *single exception* to the law in question.

* *Recherches sur la Phthisie*, page 179.

The most important facts relative to the influence of age, sex, &c., upon the production of phthisis, are next laid before the reader, after which the secondary lesions, such as adhesions of the pleura, perforation, &c., are successively described. Upon the whole we think that Dr. G.'s account of phthisis is one of the best in the work, though we cannot admire the tone or agree with the sentiments contained in the following paragraph.

"I shall only further illustrate this subject by making a few cursory remarks on the *nature and symptoms* of phthisis. It is not deemed necessary to reiterate here what was said in a previous chapter, concerning the doctrine of the inflammatory origin of tubercle.* The subject has been discussed at sufficient length. Since writing that part of the work, I am happy to find that similar views have been promulgated by some of the most eminent pathologists of Europe. That the doctrine of the inflammatory nature of tubercular phthisis will be generally embraced by the profession, it requires, I think, no prophetic vision to foresee. Every one who has carefully investigated the subject must be fully convinced that it is the only true one, and it is only surprising that there should ever have been any other. We do not deny those who have no personal experience in this matter the right of forming an opinion: we assume no such authority; but we conscientiously believe that those who entertain a different view are, in ninety-nine cases out of a hundred, completely disqualified from coming to a just and rational conclusion concerning the point at issue. This is strong language, we grant; and we shall be very happy to modify it as soon as our physicians shall make themselves better acquainted with the principles of morbid anatomy, and the laws of abnormal action."

Were our author "better acquainted" with "the laws of abnormal action," and had he studied morbid anatomy less exclusively in the dissecting room and been a patient observer of the symptoms developed during life, he would hardly, we think, have penned the above paragraph. We will not, however, discuss the correctness of his opinion in reference to the inflammatory nature of tubercles: we would merely recommend him to be a little more cautious than to assert that "*every one* who has carefully investigated the subject *must* be fully convinced that it is the only true one," when he must be aware that those who have investigated it much more deeply than he has done not only in the dissecting room but at the bed-side, have come to an exactly opposite conclusion; and also to be a little more courteous than to brand his opponents as being in ninety-nine cases out of a hundred "completely disqualified from coming to a just and rational conclusion." Were these opponents disposed to retort, they might perhaps tell him that his mind was not sufficiently philosophical to comprehend fully the terms of the question, or to make a distinction between a lesion being essentially dependent upon inflammation, and its being *at times* more rapidly developed or hastened in its course by this cause.

A sketch of the diagnostic characters of phthisis with a few remarks upon its latent form, conclude the section before us.

The third section, devoted to diseases of the pleura, is principally occu-

* Professor Horner, of the University of Pennsylvania, after referring to the opinion entertained by some highly respectable authorities, that the development of pulmonary tubercles is not produced by inflammation, holds the following language: "For my own part, I am not disposed to adopt this opinion. I rather view tubercles as a form of chronic inflammation, to which evidently all parts of the body are liable; but especially the lungs, from the peculiarity of their texture, and the quantity of lymphatic vessels entering into their composition." (*Treatise on Pathological Anatomy*, p. 255.)

pied by a very good description of the anatomical characters and physical signs of pleuritis, in which the connection between the one and the other is more distinctly pointed out, than we think our author has in many instances been careful to do. With this section, the chapter on the respiratory apparatus terminates. In the remaining chapters, the other organs or apparatus of the economy are successively treated of. It would be fatiguing as well as unnecessary to enter particularly into the history of each of them, and we shall therefore merely say a word or two in reference to a few points which strike us more particularly.

Considerable space is devoted to the gastro-enteric mucous membrane, softening of which is treated of in a separate section, which opens with the information that this lesion, viz: softening of the gastro-enteric mucous membrane, was first described by Dr. Louis, as a distinct pathological condition, in 1829. 'The only work published by Louis in 1829, was that on typhoid fever, in which he describes softening of the mucous membrane, not as a distinct pathological condition, but as occurring under different forms and attendant upon a variety of disorders. 'The only article of Louis on softening of the mucous membrane as a distinct lesion, was published in his memoirs in 1826, and somewhat earlier in the *Archives*. That article however is confined to softening as it occurs in the *stomach* and when accompanied by *thinning*, a lesion which at that time he was disposed to regard as dependent upon inflammation, but which he has since admitted* might perhaps in the majority of cases be dependent upon the chemical action of the gastric acid, as asserted by Carswell. Softening in the section before us is treated of as dependent upon inflammation, or as the result of the chemical action of the gastric acid. The first only is to be looked upon as a proper pathological lesion, the description of which by our author coincides in most respects with that given by Dr. Carswell of inflammatory softening, but differs materially from the lesion described by Louis in the memoir above referred to. This latter belongs in the main at least to our author's second head of softening by the gastric juice, and we have no doubt that M. Louis would very cheerfully resign the honor conferred upon him, of having first described softening of the mucous membrane of the alimentary tube, as a distinct pathological lesion, and would have been much more indebted to Dr. G. if he had given him credit for his researches in pericarditis and emphysema of the lungs, in connection with which he has not even mentioned his name. Whilst speaking of the credit given to authors, we will take occasion to observe, that it strikes us as exceedingly singular that in a treatise on pathological anatomy, written by an American, no notice should have been taken of the labours of one of our countrymen, who has done as much, if not more, than any one in this country to elucidate various parts of the science—we allude to Dr. Gerhard, whose name is not mentioned by Dr. Gross, except on one occasion, as the mere reporter of a few cases of gangrene of the lungs. Besides the complete omission of any mention of his researches in meningitis, which has been already alluded to, in lobular pneumonia, &c., we find a new instance of the same kind in the part of the work now before us. Speaking of follicular inflammation, our author says that the subject is much agitated at this moment in relation to the pathology of *typhous*

* Examen de l'examen, p. 16.

fever. He then goes on to express his conviction that this disease is connected with inflammation of the follicles either as cause or effect.

"How this question will be ultimately settled it is impossible to foresee; I have very little doubt, however, that it will be in favor of the opinion which attributes typhoid fever to a primitive lesion of the mucous glands; and in this belief I am justified by the severe constitutional disturbance which is so constantly present whenever these bodies are seriously affected."

It is evident that he uses the term typhus and typhoid fever as synonymous. This may be from inadvertence, or it may be that he does not recognize any essential distinction between them, though we really do not see how this is possible, after admitting that typhoid fever is dependent upon a primitive lesion of the glands, for Dr. Gerhard has shown that this lesion does not occur in *typhus* fever, properly so called. This writer was confessedly the first who clearly made out the *anatomico-pathological* distinction between these two forms of fever, and we repeat that we cannot understand how an American compiler of a general treatise on pathological anatomy could feel justified in passing over this, as well as every other discovery of one of his countrymen, especially when he takes occasion to mention in the most flattering manner, others, whose labours have been comparatively insignificant. Want of room cannot be urged as an excuse, for these omissions, for all that is really valuable in the work might, with advantage, have been comprehended in half the space it now occupies.

We conclude our remarks by observing that Dr. Gross has evidently much practical acquaintance with morbid anatomy of that kind which may be obtained in a dissecting room, and has also read extensively, and we most cheerfully give him the credit which is justly due him on this account. His work, however, is, in our estimation, obnoxious to criticism in several points, some of which we have endeavoured to indicate. Its errors are owing, probably, in part at least, to the rapidity with which it has been compiled, four years being a very short time for such an undertaking.

The plan of the work, however, is an excellent one, and should another edition be called for, we trust the author will take advantage of this to more thoroughly digest its various parts, prune it of its redundancies, and more carefully examine into the statements which we have criticised. Should he do so, his work would afford a far better and safer guide to medical students, in the acquisition of a thorough knowledge of pathological anatomy, and would doubtless stimulate the medical men of this country to the practical investigation of the subject.

T. S.

BIBLIOGRAPHICAL NOTICES.

ART. XIII. *The Library of Medicine, being a System of Practical Medicine, comprised in a series of Original Dissertations.* Arranged and edited by ALEXANDER TWEEDIE, M.D. F.R.S. *Fever, Inflammation and Diseases of the Skin.* 8vo. pp. 561. Philadelphia: 1840.

THIS is the first of a series of volumes, now in the course of publication, which are intended to present a complete outline of practical medicine, embracing all the modern improvements in pathology and therapeutics.

The plan of the work is an admirable one, and if skilfully executed, will render the Library of Medicine a valuable acquisition to the great mass of the medical profession in this country.

A concise, accurate and judicious summary of the present state of practical medicine, is a work much wanted, more especially for the use of the student and younger members of the profession. We possess, it is true, numerous systems of the practice of medicine, in many of which the more recently established facts in relation to the pathology and treatment of the ordinary forms of disease, have been collated with considerable care; but these systems being the production of individuals, who, however high their standing may be in the profession, having had no opportunity of becoming acquainted with many of the diseases they describe, they are unable to make even a judicious use of the facts and opinions recorded by others in relation to them. While, therefore, in some cases these systematic works may be referred to with safety for information, in others they are calculated only to mislead. In the work before us, the gentlemen engaged to furnish an account of the different subjects which it comprises, while they rank generally among the most distinguished practitioners and medical writers of Great Britain, have made the particular diseases, of which they respectively treat, their especial study, and have had also the most ample opportunities for the acquisition of a practical knowledge in relation to them.

If the volume already published may be received as a fair specimen of the entire series, it will constitute unquestionably one of the most complete and useful manuals of practical medicine in the English language; which, while it can be safely recommended as a guide for the student, may also be consulted with no little profit by the physician.

The volume before us, as will be the case with each succeeding one, is complete in itself. Besides a general pathological introduction, it comprises the subjects of inflammation, of fever, and of diseases of the skin.

The pathological introduction is from the pen of Dr. Symonds—under the several heads of Diseases of the capillary system, viz. 1. Disordered circulation, including congestion, local anæmia, inflammation and hæmorrhage; 2. Diseased secretion, fibrinous, serous and purulent; heterologous formations, tuberculous, carcinomatous, melanotic and gaseous; 3. Diseased nutrition, including hypertrophy, atrophy, softening, induration, transformation, ulceration and mortification; Diseases of the blood, plethora, anæmia, and cachæmia; Diseases of nerves and contractile fibres; hyperæsthesia, anæsthesia, dysesthesia, spasm paralysis and the neurotic diathesis—is presented a brief but highly interesting and instructive outline of general pathology, calculated to exhibit to the reader a view of the more simple forms of morbid action, before leading him to the investigation of those complex phenomena which are the subjects of nosology.

The very skilful and lucid manner in which Dr. Symonds has, in the preliminary chapter, sketched the proximate elements of disease, and the leading principles which determine the association and succession of morbid actions, renders it not only an appropriate introduction to the several dissertations on particular diseases which follow, but, also, one of the most admirable expositions of the rudiments of general pathology with which we are acquainted. Were every student of medicine to make himself master of its contents, at the very commencement of his studies, we are convinced that he would find his acquisition of correct views on the nature of morbid action generally, as well as of the particular forms and combinations of it which characterize individual diseases, to be greatly facilitated.

The chapter on inflammation is by Dr. Alison. The subject is considered in a general point of view, and in a very able manner. In reference to its phenomena, essential nature, causes, anatomical characters, varieties and complications, its modes of fatal termination and its medical treatment, all the leading facts, as well as the opinions of the most authoritative pathologists and practitioners of the present day, are briefly noticed, but at the same time with a degree of clearness and accuracy seldom to be observed in so concise a summary. The chapter contains throughout but few leading points of a very doubtful or decidedly erroneous character, although many of the opinions thrown out by the author will admit of not a little discussion. The doctor's views in regard to specific inflammations appear to us, however, to be particularly exceptionable. It would be better we conceive to dispense entirely with the use of the word *specific* as a pathological term. It has been employed heretofore, rather as a cloak for our entire ignorance of the true character of certain forms of disease, than to express any correct or definite idea in relation to them. In proportion as our acquaintance with the pathology of morbid action has increased the number of specific diseases which formerly crowded our nosological lists has been diminished, and even the few that still remain might with great propriety be omitted. Most of the diseases ranked by Dr. Alison as specific inflammations should, in our opinion, be removed altogether from the class of inflammations—such is the case in regard to scrophula, gout, and certain forms of neuralgic rheumatism; for although these affections do present, in their course, certain of the phenomena of inflammation, yet these are so intimately associated with, and to a certain extent modified by, other morbid conditions of the parts in which they occur, as to prevent them from being described or treated as inflammation. If it be proper to admit of a scrophulous, gouty or rheumatic inflammation, why not also a cancerous, variolous, syphilitic and tuberculous inflammation, or indeed to describe as many specific inflammations as there are diseases of which any of the phenomena of inflammation constitute a part of the symptoms. In relation to erysipelas and inflammatory rheumatism, we consider the one to be the proper inflammation of the dermoid and the other of the fibrous tissue.

The consideration of fevers succeeds to that of inflammation. The account of the general doctrines of fevers, and of the pathology and treatment of the leading forms of continued fever, is by Dr. Christison. The pathology and treatment of plague, which is ranked among the continued fevers, and of intermittent and remittent fevers, including yellow fever, is by Dr. Shapter.

Although the subject of fever, generally considered, is treated with very considerable ability by these gentlemen, and the history of its several forms, together with their therapeutical management, excepting so far as relates to yellow fever, is delineated with great judgment and accuracy, there are, nevertheless, many points connected with the subject in which the views advanced in the work before us are in our opinion erroneous, or at least want the support of a sufficient series of well authenticated facts—while in other instances their conclusions drawn from the facts adduced, are very far from bearing the stamp of perfect legitimacy.

The doctrine of the essential or primary character of fever is maintained and enforced by Dr. Christison, and acquiesced in by the other writers concerned in the preparation of this department of the Library—a concise summary of the

leading arguments by which this doctrine is supposed to be established is presented.

Setting out with the position that "fever is an essential or primary disease," that is, a disease entirely independent on any local disease of any portion whatever of the organism, Dr. Christison remarks, that "the first appreciable event in the chain of sequences constituting fever is a *functional injury* of the nervous system. The only essential or invariable consequence of this affection is *functional derangement* of most of the important organs of the body, but more especially of the brain, the circulating organs and fluid, the alimentary canal, and the skin." It seems to Dr. C. a reasonable though hypothetical doctrine, "that the primary disturbance of the functions of the nervous system acts first on the capillaries, or extreme vessels of the surface, as well as throughout the internal organs, and produces, not spasm, as was imagined by *Hoffman* and *Cullen*, but rather, according to modern views of the state of the capillaries in inflammation, a state of atony, relaxation, and distension, and consequently obstruction to the passage of the blood; that the disturbed state of the circulation is an effort excited by the stimulus of this obstruction for accomplishing its own removal; and that the disturbance of the function of circulation is variously modified by the constant coexistence and direct influence of the disturbance of the nervous functions. At all events," the Doctor remarks, "there seems no question, that there are always two leading phenomena in fever, howsoever induced—disturbance of the nervous system and disturbance of the circulation; that howsoever connected originally in the chain of sequences, they act and react on one another, and that their coexistence and reciprocal action, while they account on the one hand for many subordinate phenomena which are otherwise unintelligible, must on the other be kept constantly in view as modifying singularly the effects of remedies, and therefore regulating in many essential respects the method of cure."

It would, we conceive, be no very difficult task, from the very facts referred to in the work before us, to prove the fallacy of the general doctrines laid down by the writers in regard to the nature and production of fever. This, however, it would be unnecessary to attempt, even had it been our intention to enter into a formal review of the several departments of the work, inasmuch as the almost invariable occurrence, at an early period, in all the forms of fever, of local irritation and local inflammation, is clearly pointed out, and these local affections it is admitted become all important in reference to the treatment of fever—"more important frequently than the febrile state itself;" nay, further, Dr. Christison considers it to be well ascertained, that "the same irritations which will excite local inflammation in the stomach and intestines, attended with symptomatic fever, may also at times excite the febrile state independently of positive inflammation."

Hence the many and serious errors to which the doctrine of the essential nature of fever is calculated to lead, in regard to the treatment of certain of its forms, are entirely obviated by the attention being thus directed to the local affections by which they are attended, the prevention or removal of which by appropriate remedies, is essential to the safety of the patient, and his speedy restoration to health.

The fact is, that although Dr. Christison has seen fit to condemn the physiological doctrines of fever, as altogether erroneous, the entire article before us exhibits, without the writer himself appearing to be aware of it, their beneficial influence.

Fevers are divided by Dr. C. into primary, irritative and eruptive. The primary fevers are subdivided into continued, intermittent and remittent. Continued fever includes the three forms of synocha, synochus and typhus—in other words, the inflammatory, mixed or nervous, and adynamic forms of fever.

In the sections which treat of continued fever, we are presented with a very sensible, clear and accurate summary of all the important facts connected with its phenomena, the local diseases by which it is accompanied, its sequelæ, its

prevalence, duration and mortality; its anatomical characters, causes, prognosis, treatment and prophylaxis.

In considering the symptomatology of continued fever, the writer describes, first, the essential phenomena of its three leading forms or types, and then the phenomena which are incidental or accessory.

"It seems advisable," he very justly remarks, "that the symptoms of the three types be viewed in succession, or close relation to each other, because they are, at least in the opinion and according to the experience of the writer, mere varieties of one fundamental disease, originating in the same causes, and constituted merely by differences in those obscure co-operating influences, which are alluded to when we speak of epidemic constitution. This is the conclusion to which every one will arrive, who has had an opportunity of closely watching, in hospital practice, a long series of epidemics, similar to those which have ravaged the city of Edinburgh between the year 1817 and the present time. For the disease has been clearly seen, during that interval, to pass very gradually from a type, in which pure inflammatory fever was exceedingly common, first into one composed of the same fever in the early stage, and of adynamic fever in the advanced state, and at length into a type of nearly pure adynamia or typhus, which has prevailed for a few years past. And these changes have thus gradually taken place, without any other essential alteration in the history of the disease, but especially without any change in its apparent mode of propagation and causes."

This mode of considering the several forms of disease, usually ranked under the head of continued fever, and which, we are convinced, as well from observation as from our views of the nature of fever, is the correct one, while it removes from the subject a good deal of the confusion with which it was formerly invested, has a very important bearing upon the treatment, especially of the synochus and typhoid forms of fever.

While the writer denies the strictly contagious nature of continued fever, he maintains that all of its forms are communicable by infection, in probably an equal degree. In evidence of the infectious nature, using this term in its legitimate sense, of synochus and typhus fever, there appear to be a number of apparently conclusive facts. How far this is true in regard to synocha, we pretend not to determine, not being conversant with any form of fever corresponding exactly to the description of synocha, given in the books.

A very sensible and interesting summary of the laws of infection is presented by Dr. Christison, a close attention to which will be found very necessary in order to a correct appreciation of the etiology of continued fever.

We would remark, however, that while we have no reason to doubt the propagation of continued fever, by infection from the sick, in situations and under circumstances favourable to the generation of such infection, we nevertheless consider the possibility of the occurrence of the different forms of continued fever, both endemically and epidemically, totally independent of any emanations from the sick, as fully established—a fact which the writer before us appears inclined to call in question, or at least to consider as extremely doubtful. He would seem, indeed, notwithstanding he has noticed most of the facts brought forward by different writers in relation to the etiology of the fevers generally, to be somewhat unsettled in his own views on this subject. The question is certainly a very complicated and difficult one, though capable, in our opinion, of a very satisfactory solution, from the materials already in our possession.

The author's account of the proper treatment of continued fever, is extremely judicious; it is evidently the result of careful observation, made under circumstances well adapted for the acquisition of practical knowledge.

The account of intermittent and remittent fever is, as we have already noticed, by Dr. Shapter, who, in the compass of less than forty-nine pages, has given a very clear and judicious summary of the present state of our knowledge in relation to these two prevalent forms of disease, comprising all the important facts connected with their history, nature and treatment.

The doctor ascribes the production of both these forms of fever almost exclu-

stively to marsh miasm or paludal exhalation. In so doing, he has followed the major part of the continental, and nearly all the English authorities. The fact, however, should have been noticed, that the very existence of the *specific* "morbid agent," denominated marsh miasm, has been called in question. To say the least, the insufficiency of the evidence by which the operation of such an agent in the production of fever is attempted to be established, must be evident to any one who will take the trouble cautiously to analyse it, while the frequent occurrence of both intermittent and remittent fever, in situations and under circumstances the very reverse of those, supposed to be essential for the development of marsh miasm, proves that, even if we admit the existence and occasional agency of the latter, it is very far from being the only source of these forms of fever.

The chapter on yellow fever is the least accurate of any in the volume before us. In regard to this form of fever, the writer, Dr. Shapter, appears to have had no personal experience, his account of it being drawn exclusively from the writings of others. In the selection of his authorities, he has not, however, exhibited the best judgment, nor has he collated with sufficient care the various facts presented by those he appears to have consulted. Hence his description of the disease is far from being either clear, or in all respects perfectly accurate, while, in regard to many particulars connected with its diagnostic phenomena, its causes, and the lesions by which it is especially characterized, the summary of the writer is replete with error. His account of the treatment of yellow fever is rather an outline of the discordant plans recommended by different physicians, than an attempt to determine, by the weight of evidence adduced in support of each, their comparative value.

In the class of irritative fevers are included the gastric remittent fever, of children, and hectic fever.

The account of the first of these fevers, is from the pen of Dr. Locock, who has presented one of the best descriptions of the disease, in its acute and chronic forms, we have ever met with. The plan of treatment he has laid down, at least in its general outline, is one sanctioned by experience. We have, however, found the application of leeches to the epigastrium, to be more generally demanded than is recommended by Dr. Locock; even in the chronic form of the disease, their application, in many cases, we have found decidedly beneficial. We should object, also, to the free use of active purgatives to the extent directed by the writer. In the chronic form, it is true, he cautions against the repeated administration of purgatives; but in the acute form, "the fulness and hardness, (of the abdomen,) distinct from collections of air, which are easily detected by percussion, will denote," according to Dr. L., "the necessity of following up the use of *active purgatives*, which may be continued at sufficient intervals, so as not to harass and exhaust the patient, till we are satisfied that the intestines are emptied." It is precisely under the circumstances here referred to, that we have found the repeated use of active purgatives to be productive of injurious effects. The very description of stools, which many writers describe as indicating the necessity of active purgatives, are not unfrequently produced by the use, or, at least, the too frequent repetition of this class of remedies.

A very good sketch of the symptoms, the principal causes and the treatment of the remaining fever, classed under the head of irritative, namely, hectic, is from the pen of Dr. Christison.

The doctor draws a distinction between what he considers to be genuine hectic fever, and the other varieties of irritative fever, especially those which attend certain chronic internal inflammations, to the accuracy of which we cannot subscribe. He very properly describes the paroxysms of hectic fever as occurring with great regularity, the principal exacerbation taking place in the evening, altogether independent of the febricula of digestion, reaching its height about midnight, or a little later, and going off towards morning with a copious perspiration, whereas, in the other varieties of irritative fever, the exacerbations, he remarks, are more irregular in their periods, or where a periodicity is remarked, the exacerbations will be found to be connected with the excitement incidental

to digestion. True hectic Dr. C. believes to occur only in connection with suppuration or serious derangement of structure in the internal viscera.

Admitting, as we do, the very great regularity observed in the exacerbations and remissions of hectic fever, whether occurring once or twice in the twenty-four hours, as well as its dependence, in the generality of cases, upon suppuration or extensive organic disease, yet it is, nevertheless true, as our observations have taught us, that genuine hectic fever does occur, in numerous instances, totally unconnected with either—the proper symptoms of the fever being, in such cases, distinguishable in no important particular, from those of the hectic fever of phthisis pulmonalis, or that dependent upon extensive collections of pus within the chest.

Under the head of eruptive diseases, are included in the present work small-pox, measles, and scarlet fever.

The history of small-pox and its varieties, its anatomical characters, causes and treatment, is by Dr. Gregory. For the general accuracy of this portion of the library, the well known talents of Dr. G., and his intimate acquaintance with the subject, are a sufficient guarantee.

Vaccination is very properly treated of, by the same writer, in immediate connection with the disease for the prevention of which it is alone performed. Upon this subject, there are one or two statements made by Dr. G.; which it may be well to notice.

The writer, in common with the major part of the British and continental physicians, direct that, for the communication of the vaccine disease, the lymph be used in a fluid state, and direct from the arm, whenever practicable, and he remarks that “after the formation of the areola, the true specific matter of cow-pox becomes mixed with variable portions of serum, the result of common inflammation, and this diluted lymph is always less efficacious than the concentrated virus. After the tenth day, the lymph becomes mucilaginous and scarcely fluid, in which state it is not at all to be depended on—out of a dozen incisions made with such viscid lymph, not more than one will prove efficacious.”

Now, the experience of nearly the whole of the medical profession in this country, proves incontestibly, that the vaccine crust, or scab, dissolved in water, will, very certainly, produce the disease in an individual in whose arm it is carefully inserted; and we know, from numerous comparative experiments, that the vaccination performed with the scab does not differ in any of its phenomena, from that in which the recent lymph has been employed.

According to Dr. Gregory, “it is impossible, now, to call in question the fact that vaccinated persons are more liable to attacks of small-pox than those who have once undergone that disease.” Our own observations, made during the several small-pox epidemics which have occurred in the city of Philadelphia and its environs, since the year 1826, have certainly led us to a directly opposite conclusion.

Dr. Gregory states that “it is a matter of general notoriety, that small-pox, taken casually after vaccination, is very rare under the age of eight years. The protective power may be considered as nearly complete for that period. About the ninth or tenth year of life, small-pox, after vaccination, begins to be met with. It increases in frequency at the period of puberty, and is still more common between the ages of eighteen and twenty-five. With these facts before us,” he remarks, “it is impossible to conceal the apparent conclusion, that time lessens the power of resistance to the variolous germ.”

So far as our experience extends, this statement does not hold. We have found that children, under ten years of age, were equally as liable to an attack of small-pox subsequent to vaccination, as individuals beyond this age. We can refer, it is true, to no official documents affording the necessary data to settle the question, but of sixty-three cases of death from varioloid, which are all that are recorded in the bills of mortality, kept by the Board of Health of this city, and which we may presume to have occurred among such as were the least fully protected from the small-pox, we find that thirty-six were of individuals under

ten years of age, five between ten and twenty, fifteen between twenty and thirty, and seven above thirty.

In regard to the question of revaccination, Dr. G. offers the following remarks:

"By many of the physicians of Germany, this measure is extolled as scarcely less important in its effects, nor less widely applicable than vaccination itself. The authorities in Paris, on the other hand, have reported to the French Government against the necessity of revaccination, and there is really some difficulty in deciding on the actual merits of the plan. The Germans aver that few, if any, of the recently revaccinated, have fallen under the influence of small-pox, but the time which has elapsed since the general adoption of the measure, detracts from the value of such a statement. The practice may be recommended for its safety, even if it be much less serviceable than the Germans contend for; we have sufficient facts before us, to state with confidence, that it need never be recommended prior to the tenth year of life, and that the age best fitted for it is from the period of puberty to that of confirmed manhood."

The subject of measles, and that of scarlet fever, are treated in a very masterly manner by Dr. G. Burrows. Of the leading facts connected with the pathology and treatment of both diseases, he has presented a very excellent compendium.

The sketch of the history of the several forms of fever usually met with during the puerperal state, their distinctive characters, and therapeutical management, by Dr. Locock, is, in general, executed with great ability. In some few particulars we should be inclined to dispute the perfect accuracy of the writer's views.

The chapter commences with some very pertinent cursory remarks on the various opinions held by pathologists as to the nature of puerperal fevers, the several forms of which are then described under the heads of acute peritonitis—adynamic or malignant puerperal fever—puerperal intestinal irritation and false peritonitis, and the chapter concludes with a few remarks on milk fever and its proper management.

The observations on puerperal intestinal irritation, an affection which the author has certainly misplaced in arranging it among the varieties of puerperal fever, are highly interesting, and deserving of great attention, as the morbid condition here described, neglected or mismanaged, is very apt to be the precursor of a more serious and unmanageable disease.

To the denomination, false peritonitis, we object. The writer himself admits that the affection described under this name, is apparently the first stage of acute puerperal peritonitis, it would be better therefore to describe it in connection with the latter; the name, at any rate, is particularly objectionable, and apt to mislead.

The volume before us concludes with an admirable synopsis of the diseases of the skin, by Dr. Schedel of Paris.

Concise as this synopsis is, occupying only eighty-seven pages, it nevertheless presents one of the best general summaries with which we are acquainted, of the distinctive characters and progress of the various cutaneous diseases, as well as of the remedies which experience has shown to be best adapted for the cure of each. We know of none better adapted to place in the hands of the student to prepare him for the profitable perusal of the more extended treatises on this class of diseases.

In concluding this superficial notice of the first volume of the Library of Medicine, we take a great pleasure in recommending it to the attention of the profession in this country, as presenting, in relation to the forms of disease of which it treats, an admirable digest of the present state of pathology and therapeutics. The very beautiful style in which the American edition has been got up is, in our opinion, no trifling recommendation, more especially when, as in the present case, it is not made the excuse for extravagance in the price demanded.

D. F. C.

ART. XIV.—*An Essay on the Subject of the Yellow Fever, intended to prove its Transmissibility.* By B. B. STROBEL, M.D., Late Physician of the Charleston Marine Hospital. "*Audi alteram partem.*" 8vo. pp. 224. Charleston: 1840.

THE question, the solution of which, Dr. Strobel has attempted in the work before us, is, confessedly one of very great importance, not merely to the medical profession, but also to the public at large, inasmuch as by its correct solution alone can we decide upon the means best adapted to guard against the introduction of the yellow fever from abroad, or in the case of its appearing in the midst of a community, to prevent with certainty its further extension.

If it be true that the yellow fever is transmissible from the sick to the well by either contagion or infection, there cannot exist a doubt as to the necessity of the most rigid quarantine of every vessel coming from an infected port; and when the disease is generated at home by endemic causes, of the propriety of the most prompt and effectual measures being taken, not only to cause the removal of every inhabitant from the localities in which it makes its appearance, but likewise to cut off at once all communication between the infected and uninfected. But if, on the other hand, it can be shown that the yellow fever is not contagious, nor capable, in a pure atmosphere, with a proper attention to cleanliness and ventilation, of being propagated by infection, then prudence, justice and humanity all forbid the adoption of any measure which has for its end such an isolation of the sick as shall deprive them in any degree, of the presence and attentions of their kindred and their friends.

If the doctrine of the transmissibility of yellow fever be well founded, the sooner the public are convinced of the fact, the better, but if it is false, every effort should be made to destroy the baneful influence which a belief in it has invariably exerted whenever and wherever the disease has appeared—closing the ears to the cries of distress—sealing the heart against the calls of humanity and causing, too often, the abandonment of the sick and the dying to the care of strangers, or to suffer and expire in gloomy, cheerless solitude.

"Dependents, friends, relations, love itself,
Forget the tender tie—
The sweet endearments of the feeling heart."

Thus adding additional horrors to those produced by the ravages of the pestilence, and increasing, to no trifling extent, the number of its victims.

The importance of the question, in regard to the transmissibility or non-transmissibility of the yellow fever, has directed to its investigation the attention of physicians in every part of the world where the disease has prevailed, but notwithstanding the zeal and abilities of many of those who have undertaken its solution, and the numerous facts that have been accumulated in relation to it, it nevertheless still remains a subject of dispute. The weight of authority is certainly opposed to the doctrine of the contagious nature of yellow fever; many writers of eminence would seem, however, to favour the opinion which refers its propagation to infection, while a few still maintain that it is communicated, in certain cases at least, by contagion, in the proper sense of the term; most of these last admit, however, that the contagion of yellow fever is inoperative, excepting in a confined and vitiated atmosphere.

The question is one of so complex a nature, and surrounded by so many difficulties, as will render it in all probability impossible for us ever to arrive at a positive solution of it.

In the work before us, as its title announces, Dr. Strobel has assumed the affirmative of this question, and attempts by a reference to a large mass of facts and other evidence, to prove that the yellow fever is capable of transmission, under certain circumstances, from the sick to the well—that while it may occur endemically, it is more frequently introduced from abroad, either by an infectious principle emanating from the holds of vessels coming from sickly ports, by fomites, or by an infection emanating directly from the persons of indi-

viduals arriving with the disease from places where it was prevailing at the period of their departure.

"Much confusion," he remarks, "has arisen, in consequence of the various definitions given to the words contagion and infection; without pretending to solve these nice distinctions, which are calculated to confound, without enlightening the public mind—we shall make use of the word transmissibility, as embracing both modes of propagation, whether by infection or contagion. Now what we mean by the transmissibility of the yellow fever, is this—that if the atmosphere of Charleston, or any other city, be in such a condition, as to predispose to *some form* of febrile disease, and then, and under such circumstances, vessels arriving from Havana or Matanzas, where the disease is prevailing at the time, bringing in their holds a quantity of fruit, *together with the epidemic atmosphere of those places*; on this atmosphere and vegetable effluvia being discharged among the shipping in harbour, whose crews are predisposed to take the disease, *our atmosphere* may become so infected, as to generate that particular form of fever. Should the same vessels, however, enter a perfectly healthy atmosphere, the poison finding no appropriate medium for its extension, will become dissipated and harmless."

"Let it not be supposed, however," he adds, "that we contend for the *exclusive* importation of yellow fever; we believe, on the contrary, that it may, and does arise sometimes from local causes, under certain conditions of the atmosphere."

The same doctrine of infection by a species of "morbific ferment," which, when introduced into a confined or vitiated air, changes the latter into its own nature, is adopted by Dr. Strobel to explain the propagation of the disease when it occurs endemically, though we should judge, from many of his expressions, that he believes also in its absolutely contagious character; we may have, however, misunderstood the author in the latter particular, in consequence of the great want of precision, which marks nearly all his observations, and the absence of a strictly logical arrangement in his method of discussing the subject.

Dr. Strobel has collected a large mass of materials in reference to the circumstances under which the yellow fever has made its appearance in various parts of the world—the manner of its extension from place to place, and from individual to individual—with most of these materials the profession are already familiar, while their bearing upon the question before us has been ably discussed by some of the most distinguished medical writers of the past and present centuries.

In adducing these materials in support of the position which he advocates, Dr. Strobel would seem to imagine that it is by its amount and not by its quality that medical evidence is to be estimated. He has certainly taken very little, if any pains, to collate cautiously the facts advanced by the different authorities he has quoted, or to arrange them in a very lucid manner. He appears not to have perceived that some of the statements he has brought forward are contradictory, or at least inconsistent with each other—that others can be viewed in no other light than as mere expressions of opinion, unaccompanied by the data upon which those opinions are based; that many of the very facts he has adduced, are of no value as evidence, being the result of partial observations, and deficient in those particulars which are essential to a proper appreciation of their true bearing, and that not a few of the remaining statements contained in his pages, are as perfectly reconcilable with the doctrine of the strictly epidemic nature of yellow fever, as with that of its contagious or infectious character.

The most interesting portion of Dr. S's work, is that which comprises the facts connected with the occurrence of yellow fever in the city of Charleston in the year 1839. Even these facts are defective in many important particulars, and by no means so conclusively establish the author's views as to the origin and spread of the disease in that city as he seems to imagine.

We are indeed convinced that the publication of the volume before us will have but a slight influence in gaining converts to the doctrine of the transmissi-

bility of yellow fever by infection, generated in the manner supposed by the writer, while it altogether fails in establishing its propagation by a strictly contagious principle.

Dr. Strobel has exhibited a feeling of partizanship in the defence of the doctrines he sets forth, and has indulged in expressions towards those who differ from him in opinion, unbecoming in one whose only aim, as he asserts, and which we have no reason to disbelieve, is the discovery of truth, and certainly altogether out of place in a treatise devoted to the discussion of a question purely professional.

The statement quoted by the author from the *Dictionnaire des Sciences Médicales* in relation to the declaration said to have been made by Dr. Rush during his sickness, to the effect that he had advocated the doctrine of non-contagion in yellow fever, without believing in its correctness, is altogether apocryphal, and as it seriously implicates the honesty of one, whose character it should be the pride of every American to sustain, it was unjustifiable in Dr. Strobel to give currency to it unless he had in his possession conclusive evidence of its correctness.

D. F. C.

ART. XV.—*Narrative of the Discoveries of Sir Charles Bell in the Nervous System.*

By ALEXANDER SHAW, Assistant Surgeon to the Middlesex Hospital. 8vo. pp. 232. London: 1839.

THE object of the present work is to exhibit a history of the recent discoveries in the nervous system, together with a view of the general principle on which the late improvements in this department of physiology have been founded; and to show how far we are indebted to different physiologists for propounding and confirming that principle.

We are informed, that the immediate cause which induced Mr. Shaw to enter on this subject, was the appearance, with remarkable frequency, in different publications of general and extensive circulation, of statements, altogether unfounded, and obviously proceeding from one common source, concerning the views originally expressed by Sir Charles Bell as to the functions of certain important parts of the nervous system.

The discoveries in relation to the anatomy and physiology of the spinal nerves, the fifth pair, the portio dura, the glosso-pharyngeal and the spinal accessory nerves, claimed by Sir Charles Bell as being derived from and established by experiments and modes of investigation planned by himself and originally performed by him, or at his instigation, are so well known to all our readers, as to render it unnecessary that we should here particularize them. It appears that recently, the honour of originating these discoveries has been denied to that gentleman and ascribed to M. Magendie and Mr. Mayo.

The attempt to rob Sir Charles Bell of the credit he so justly merits for the important additions made by him to our knowledge of the physiology of the nerves, and which have led the way to other valuable improvements in our views of the structure and functions of the nervous system, is shown in the work before us to have originated with Mr. Mayo, who, in his endeavours to detract from the labours of the former gentleman, and to establish his own claims to the discoveries alluded to, is convicted by Mr. Shaw of very great disingenuousness, of gross contradictions, and not unfrequently of statements without any foundation whatever in truth.

In the interesting history which Mr. Shaw has given of the discoveries of Sir Charles Bell, and of the periods and manner of their promulgation, he has certainly disproved, in the most satisfactory manner, the claim set up by Mr. Mayo for himself and M. Magendie, in relation to the more important of these discoveries, while, at the same time, he has presented a very instructive narrative, which may be consulted with no little profit by the student of physiology.

In an Appendix, the writer has shown that the fact of the retina possessing

an appropriate sense, distinct from that of a nerve of touch, the establishment of which is formally claimed by M. Magendie, and ascribed to him by Müller, was originally pointed out by Sir Charles Bell, and distinctly referred to in his "Idea of a New Anatomy of the Brain," a copy of which was in the possession of M. Magendie, sometime previously to his announcing his discovery of the appropriate sensibility of the retina.

In closing his statements, Mr. Shaw claims the indulgence of his readers, for having occupied them so long with questions which are almost wholly of a personal nature—relating more to who made the discoveries under discussion than to the discoveries themselves.

"But," he remarks, "in begging this indulgence, I cannot refrain from throwing out the following remark for consideration. On occasions of such improvements as those we have been discussing being achieved, the profession generally has a duty to perform. Doubtless, the individual members composing our profession, are under the sacred obligation to exercise their talents, so as to advance the common science in which all are immediately interested to the utmost degree. The profession, I repeat, has a claim upon individuals for these exertions; and to conceal or withhold any improvements which may have been made, whether relating to the administration of the doses of a medicine, or bearing upon questions of higher interest, affecting the general principles on which practice is founded, is a thing universally reprobated. This feeling, amongst men educated liberally, is a just one. But, allowing all this, it is inconsistent with fair dealing for the benefit to be all on one side. For the advantages it receives, the profession is under a bounden engagement, to mete out with justice the only reward it has in its power to confer, upon those members who have zealously and successfully wrought in its behalf; and the responsibility of cherishing and defending the reputations of their members, does not expire when the individuals, who have been thus engaged in its service, are removed by death."

D. F. C.

ART. XVII. *Memoranda for Practitioners in Midwifery.* By EDWARD RIGBY, M. D., &c. First American edition, with additions. By S. C. FOSTER, M. D., Licentiate of the Dublin Lying-in Hospital, &c. 18mo. pp. 63. New-York: 1840.

We find little in these memoranda which calls for either praise or censure. We confess that, as a general rule, we are opposed to all works of the class to which the present belongs. Too superficial to serve as a proper introduction to the study of the particular subjects of which they treat, and apt to mislead by the few imperfectly detailed facts or instructions they communicate, they are consequently not adapted for the use of the student, who has generally at his command far safer and more competent guides than works like these can prove under any circumstances; while to the practitioner they afford no information, recall to his mind no fact or precept with which he is not expected to be fully conversant, and without a perfect familiarity with which, he is incompetent to the active duties of his profession. It is probable that some may, after committing to memory the obstetric memoranda of Drs. Rigby and Foster, believe themselves fully competent to conduct any case of labour, and it is this very circumstance which gives to works of this kind a somewhat mischievous tendency. For though they will scarcely be consulted by the industrious student, to the idle they may occasionally afford a form of knowledge without its substance, and thus effectually allure him from those sources from whence, alone, the true principles of the obstetric art can be acquired.

D. F. C.

ART. XVIII. *Treatise on the Physiological and Moral Management of Infancy.*
By ANDREW COMBE, M. D., &c., with notes and a supplementary chapter. By
JOHN BELL, M. D., &c. 12mo. pp. 307. Philadelphia: 1840.

WE are pleased to see that an edition of the present work of Dr. Combe has been so promptly published in this country, being convinced that its extensive circulation is calculated to produce a beneficial influence, by directing the mind of parents to those principles upon which a correct system for the physiological and moral management of infancy can alone be based.

The work ought to be in the hands not only of every physician, but should also find a conspicuous place in every family library, and its pages be carefully studied by every one who is or who anticipates to be a parent. Were the precepts and principles it inculcates to be fully carried out by every mother, in the management of her offspring, not merely would their health and comfort be more effectually ensured, during infancy, but even in after life they would escape the many infirmities, sufferings and diseases, the seeds of which are sown in the nursery, when the system there pursued is, as too generally happens, one in direct opposition to the physiological laws of the infantile organism.

The work before us contains, it is true, but little that is absolutely new in relation to the rules for the hygienic treatment of infancy; its chief merit consists in pointing out, with great clearness, and aptness of illustration the connection of those rules with the physiological laws or principles on which they are based, and according to which their effects are produced—establishing, in this manner, the rationale of what were previously received “as so many abstract and individual opinions,” deriving their authority solely from the source from whence they emanated, and, by pointing out their dependence upon the positive laws of the human constitution, enabling all to understand their true value, and the manner of so applying them, in every case, as to derive from them their desired effects.

“We may compare,” remarks the author, in his preface, “a person who undertakes the management of the human constitution, whether in infancy or in maturity, without any reference to the principles under which it acts, to a traveller, who, without a map or a guide, wanders over a new country in search of some particular object or place. By some lucky chance, he may stumble at once upon the locality he is in search of, or reach it at length by some very circuitous route. But the probability is greater, that, after wandering about in uncertainty, he will be forced to return, weary and disappointed with the fruitlessness of his journey. He, on the contrary, who adopts the guidance of principles, may be likened to a traveller, who, carrying with him a map in which the chief features of the country are accurately laid down, advances with comparative certainty towards his aim. If, at any time, in consequence of omissions or minor inaccuracies, he chances to wander from the right course, the map itself soon warns him of the fact, and at the same time affords him the means of correcting the very error caused by its own imperfections.”

The present edition of Dr. Combe's treatise is enriched, by Dr. Bell, with a number of illustrative notes, together with a supplementary chapter, pointing out the great and peculiar dangers to which infancy is exposed in the United States, with the means by which these dangers may, with the greatest certainty, be avoided. In reference to his editorial labours, Dr. Bell remarks as follows:

“Availing myself of the illustration presented in a preceding page by Dr. Combe, I can say, that the map to which he refers is, also, that which we have, both of us, long ago, received as a common guide. I have not attempted to make any change in its chief features, by altering the great and important boundaries marked out in it, but have merely added, here and there, a deeper tint to some of the roads and fertilizing streams, so skilfully traced by the author of the preceding ‘Treatise.’”

D. F. C.

ART. XX.—*Principles of Political Economy. Part the Third; Of the Causes which retard increase in the numbers of Mankind. Part the Fourth; Of the Causes which retard improvement in the Political Condition of Man.* By H. C. CAREY, Author of an Essay on the Rate of Wages. Philadelphia: 1840, 8vo. pp. 270. Lea & Blanchard.

MUCH has of late years been written upon the subject of the increase of the human race and the proportions subsisting between population and the means of subsistence. A great deal of intellectual labor has been thus thrown away in multiplying unmeaning phrases and constructing baseless theories. The errors have, as we think, sprung chiefly from too limited views, and suppositious or erroneous data. Malthus, M'Culloch, Mill, Senior, Chalmers, besides many others, have devoted themselves to the exposition of the laws of population, and have all evidently failed in their philosophy. But although their entire systems cannot be recommended for adoption, still will almost every treatise be found replete with highly interesting facts and details.

The only topics treated in the volume before us, coming within our proper limits, are those which relate to the causes operating upon the movement of population. Mr. Carey is endowed in a pre-eminent degree with those mental attributes which qualify him for close numeral investigations, and in the free scope allowed to his inquiries he has made observations and furnished details of great interest to the investigator of medical statistics, as well as to the general reader.

In regard to the law influencing the increase of population, Mr. Carey entertains views diametrically opposed to those taught and so generally diffused by Malthus, according to whom there exists in every stage of society a tendency to excess of population over food, producing poverty, misery, crime and premature death. Mr. Malthus announces this law of nature as determined with mathematical precision, and gives the following formula deduced from his investigations. Under circumstances the most favorable to human industry the means of subsistence cannot be made to increase faster than in an arithmetical ratio, while the human species tends to increase in a geometrical ratio: that is to say, food increases as the numbers 1, 2, 3, 4, 5, &c., and mouths as the numbers 1, 2, 4, 8, 16, &c.; such being the case, in three centuries the population would be to the means of subsistence in the proportion of 4096 to 13, were it not checked by moral restraint, vice and misery, war, pestilence, and famine.

But let Mr. Malthus speak for himself:—"There are few states in which there is not a constant effort in the population to increase beyond the means of subsistence. This constant effort as constantly tends to subject the lower classes of society to distress, and to prevent any great permanent amelioration of their condition. These effects, in the present state of society, seem to be produced in the following manner:—We will suppose the means of subsistence in any country to be just equal to the easy support of its inhabitants. The constant effort towards population, which is found to act even in the most vicious societies, increases the number of people before the means of subsistence are increased. The food, therefore, which before supported eleven millions, must now be divided between eleven millions and a-half. The poor, consequently, must live much worse, and many of them be reduced to severe distress. The number of labourers also being above the proportion of work in the market, the price of labour must tend to fall, while the price of provisions would, at the same time, tend to rise. The labourer, therefore, must do more work to earn the same as he did before. During this season of distress, the discouragements to marriage, and the difficulty of rearing a family, are so great, that the progress of population is retarded. In the meantime, the cheapness of labour, the plenty of labourers, and the necessity of an increased industry amongst them, encourage cultivators to employ more labour upon their land, to turn up fresh soil, and to manure and improve more completely, what is already in tillage, till, ultimately, the means of subsistence may become in the same proportion to the population, as at the period from which we set out. The situation of the labourer being then again tolerably comfortable, the restraints to population are in some degree

loosened; and, after a short period, the same retrograde and progressive movements, with respect to happiness, are repeated."—*Population*, book i, chap. 2.

Mr. Carey endeavours to show that to all this there is no other objection than that of being diametrically opposed to experience, *except in those countries in which the remedies are applied*. "Men," he observes, "make war upon and plunder each other. The labour that should be applied in increasing their own means of subsistence, is wasted in assaults upon their neighbours, and in destroying the capital which they have accumulated. Both parties are impoverished by the application of Mr. Malthus's remedy for over-population, the only effect of which is to keep the supply of food and clothing below the demand, and thus to cause people to perish from hunger and cold. Peace comes—the remedy is withdrawn—and capital begins again to increase. Production is increased and men are enabled to marry. There is now again a steady increase in the ratio of capital to population, and a steady improvement of physical and moral condition, until the further application of the remedies, when the accumulation of the former is again arrested, and starvation is again found limiting the growth of the latter. Alexander, Tamerlane, Bajazet, and Napoleon, have applied them very freely, yet few of the people over whom they reigned would have been disposed to admit that the means of subsistence were thereby rendered more abundant. If we look to England, in which the remedies have had comparatively small action, we find a constantly increasing population, and constantly increasing means of subsistence. Where they are not applied, the increase of population is most rapid: where they are, it is slow. Where population increases rapidly, the increase of food is still more rapid. Where population increases slowly, food increases also slowly. Where the former is almost stationary, the latter is in the same condition. In India, the increase of population for a long period was almost nothing: the preventive and positive remedies existed in full force, but the only effect was to keep food below population. Within thirty years, Bengal has been comparatively exempt from the remedies, and there is a great increase of population, and more rapid increase of food; while in Southern India, where the remedies continued longer in action, the former is almost stationary, and there is a very slow increase of the latter. In South America, where fertile land exists in abundance, there is a slow increase of both, while in England, where the quantity of land is very limited, there is a rapid increase of the one, and a still more rapid augmentation of the other. In the former the remedies exist every where, while a large portion of the population of the latter is exempt from their action."

According to Mr. Carey's view of the matter, wherever man is permitted freely to gratify the desires implanted by nature to improve his condition, population will experience the greatest increase, and unless prevented by human interference, there will be a steady increase of the ratio of capital to population, each generation inheriting from the preceding accumulated capital in the form of houses, farms, canals, rail roads, &c., by which means it is rendered capable of employing its own labour to greater profit. Were men to abstain from using the remedies or checks for over-population—were wars to cease—were they to use the plough and the shuttle instead of the musket and sword—pestilences and famines would no longer occur—capital and population would grow together—the people of Europe would gradually extend themselves over the world—and every increase of numbers would be attended by an improvement of condition.

In the following extract from Mr. Carey's treatise, the fallacies of Malthus are, we think, very happily exposed, and the question at issue placed upon its proper foundation. "We see in every country, men who are poor and miserable from their own misconduct. Were we to take one of them, and trace him in his occasional hours of industry, and his succeeding days of idleness and intemperance, gradually wasting his means and his powers of earning a living, until we brought him diseased and wretched to the grave, and then to assert that he was the type of human nature at large—that he was only obeying a law of nature—that if he were sober and industrious, population would increase too rapidly—that for him, as one of the poor, was the kingdom of heaven—Mr. Malthus himself would reject our theory. He would point to the thousands who

conduct themselves well, and who earn not only the means of support, but of constantly improving their condition, and would reject the idea that idleness or intemperance could be in obedience to a law of nature, or could lead to happiness here or hereafter. Yet, if all mankind were sober and industrious, men would speedily be compelled to eat each other for want of other food, according to Mr. Malthus. Honest industry leads to starvation. Licentiousness and crime, robbery and murder, tend to render the supply of food abundant. In reply to all this, we have to offer the single fact, that with the increase of population and the extension of cultivation over the inferior soils, there is a constant increase in the return to labour, enabling men rapidly to improve their physical and moral condition."

In considering the circumstances which, in some of the most flourishing and best known countries, control the movement of population, such, for example, as the average duration of life—ratio of marriages to population—fecundity—emigration—efficiency of labour, &c., some of the results are as follows:

In France the marriages average 1 in 130 of the inhabitants. The births are 1 in 31.8, and the mortality 1 in 39.3. The births, including the illegitimate, are as 4.08 to each marriage, but, excluding the illegitimate the proportion is reduced to 3.79 to each marriage. At this rate the population would double in about a century.

In the Netherlands the marriages are about 1 in 132, being as 1 to 28 of the population and averaging 4.68 to each marriage. The deaths are 1 in 40 of the population. The ratio of increase per annum is about 1.1 per cent., at which rate the population would double in 65 years.

In England and Wales, for 60 years, from 1700 to 1760, the increase was little more than 25 per cent., whereas in a similar period, from 1770 to 1830, the rate has so increased that the population would double itself in 45 years.

In referring to our own country we find that the white population doubles in about 24 years, the average of births being about 1 in 21.3, and the deaths 1 in 50 of the population. At this rate the inhabitants would double in 27 years. The addition of $\frac{2}{3}$ per cent. for immigration and its consequences, would cause it to double in 24 years, which is almost precisely the movement of the population of the United States.

From Mr. Carey's estimates it would appear that of 1000 children born in France, only 493, or less than one-half, attain the age of 23, at which period he calculates marriage to take place. In the Netherlands, the proportion attaining the age mentioned is increased to 522, being 52 per cent. In England the rate of mortality is so much lower than in the two countries just mentioned, that it is probable not less than 70 per cent. of the children born reach the age of 23. In our own country, notwithstanding an increased rate of mortality under the 10th year, the chances of attaining the age at which matrimony is usually contracted have so increased as to render it probable that not less than 74 per cent. of the children born in the United States attain the age of 23.

The chapter containing an inquiry into the laws influencing the increase of population contains a curious table showing what would be the product of a single couple in 260 years, under the most favorable circumstances. In constructing this table, Mr. Carey supposes the average product of a marriage to be $5\frac{1}{2}$ children, of whom 4 live to marry at 23 years, and die at the age of 55. One-fourth of the children are thus supposed to die before attaining maturity, and of course exercise no influence on the growth of population, on which account they are entirely rejected. The period is found to be 27 years, and at the expiration of 250 years the number of living descendants from the original couple would be 1318. The whole number of births would have been 1757, and the deaths 439.

If the period of matrimony be delayed to 25 years and the productive children be born in the 1st, 4th, 7th, and 10th years, and the duration of life diminished to 50 years, then would the period of duplication be increased to 30 years.

Mr. Carey lays it down as a rule, if not a law, that a slow increase in numbers is invariably attendant upon, and is an evidence of unproductiveness of labour. The population of France, he observes, increases slowly, because of

the difficulty of obtaining subsistence, and it will increase more rapidly with every increase in the facility with which it can be obtained. "In the exact ratio of the growth of population," says Mr. Carey, "do we find the desire for education and the ability to obtain it. In France, the mass of the population is ignorant to a degree that is scarcely conceivable. In the Netherlands we find the proportion of the educated increase. In England it is still greater, but in the United States we find scarcely any who cannot both write and read. With the increase of intellectual capital, we find a constant diminution in the necessity for severe bodily labour, and thus the aged and the youthful are enabled to contribute in aid of production." Mr. Carey submits the following view of the order in which several countries stand, as regards the various matters discussed by him, including those political essentials for prosperity, security of person and property.

Security.	Duration of Life.	Growth of Population.	Marriages.
1. U. States.	1. U. States.	1. U. States.	1. U. States.
2. England.	2. England.	2. England.	2. England.
3. Netherlands.	3. Netherlands.	3. Netherlands.	3. Netherlands.
4. France.	4. France.	4. France.	4. France.
Fecundity.	Morality.	Emigration.	Efficiency of Labour.
1. U. States.	1. U. States.	1. U. States.	1. U. States.
2. Netherlands.	2. England.	2. England.	2. England.
3. England.	3. Netherlands.	3. Netherlands.	3. Netherlands.
4. France.	4. France.	4. France.	4. France.

"Where person and property are most secure, production will be greatest, and the physical and moral condition of man will be highest; there will he be most disposed to contract matrimony, and there will the fecundity of marriages be greatest; there the unmarried adults will bear the smallest ratio to the married, and the proportion of illegitimate children will be smallest; and there will the duration of life be longest. Such is the law which common sense would teach, and such is the law that is to be deduced from an examination of the operations of the world.

"We have, it is true, confined ourselves to four nations, but a law that is true in regard to that number, will be found equally so in regard to the rest of the world."

In the deductions and comparisons drawn by Mr. Carey, our own country certainly stands in a most enviable position, uniting in herself all the elements essential to the greatest national prosperity.

G. E.

ART. XXI. *Medical and Physiological Commentaries.*—By MARTIN PAINE, M. D., A. M. 2 vols. 8vo. pp. 716 and 815. New York: 1840.

This work reached us so late as to afford time merely for a glance at its contents; but this superficial examination has most favourably impressed us in relation to the learning and industry of the author. With the single exception, perhaps, of the Medical Jurisprudence of Dr. T. R. Beck, the Medical literature of this country can boast of no other large work which manifests such extensive and laborious research. But it is not only for the learning it displays, that the production of Dr. Paine may be recommended. The language and style, as well as the skill and ingenuity with which he maintains his own opinions and contests those of others show him to be a scholar, a not very common merit of medical writers in this country.

We must defer to another occasion, an examination of our author's doctrines, and in the mean time, invite the attention to the work of those who are disposed to investigate the subjects therein discussed, and they comprise some of the most important in Medical Philosophy. This will be apparent from the following titles of the nine sections into which these volumes are divided:—1. The Vital Powers. 2. The Philosophy of the Operation of the Loss of Blood. 3. The Humoral Pathology. 4. Philosophy of Animal Heat. 5. Philosophy of

Digestion. 6. Theories of Inflammation. 7. Philosophy of Venous Congestion. 8. Comparative Merits of the Hippocratic and Anatomical Schools. 9. On the principal writings of P. Ch. A. Louis, M. D.

We must not close this brief notice without alluding to the mechanical execution of the work, which is most creditable, and in striking contrast with the usual style of publication of Medical works in this country. We hope all concerned will be remunerated for this liberality.

Practical Observations on the causes and treatment of Curvatures of the Spine. By SAMUEL HARE, Surgeon. pp. 151, 8vo. plates. London: 1838.

THE work of Mr. Hare is divided into ten chapters which treat successively of the causes of the disease; The Anatomy of the Spine; On curvature of the spine; On lateral curvature; On angular curvature; On excurvation of the spine; On incurvation of the spine; On the treatment of spinal disease; On spinal irritation; and On pulmonary consumption.

In the chapters on these different states, the subjects are treated of at sufficient length for, and in language suited to, the non-professional reader, for whom the work is more especially designed. Sound advice is contained in that part of the work which treats of the causes of the disease; backboards and braces, education chairs, stays, and other contrivances to amend or protect the shape of growing females, are all justly condemned, and the benefit of regular and active exercise, cleanliness and temperance are forcibly insisted on.

The articles on the treatment of curvature are regarded by the author as the most important in the book. The mode of treatment recommended by him, both in cases of angular and lateral curvature consists in the use of an apparatus, a plate of which is given, consisting of an inclined plane, rather longer than an ordinary bedstead upon which the patient is made to recline, and furnished with a number of straps and weights for extension, and with compresses for pressure. Conjoined with the use of this apparatus, frictions, ablutions of different kinds, counter irritation, more particularly that by blisters, and strict attention to every means likely to improve the general health are recommended. Much difference of opinion exists in the profession in regard to the treatment of curvature dependent upon caries and abscess of the spine. Steel stays, backboards, head-swings and other contrivances of a similar kind that have been invented for the removal of the deformity in these cases, are condemned by the majority of surgeons, and meet with the decided disapprobation of Mr. Hare himself. We cannot ourselves be brought to believe that extension by any method, should be employed for the purpose of straightening the spine in caries attended with absorption of the bodies of the vertebræ. The recumbent position alone is all sufficient in these cases to take off the weight of the head and support of a mechanical kind should only be given when the patient begins to convalesce, or when it may be thought proper to allow of exercise by gentle walking.

Mr. Hare's work, as we have said, is designed for the general reader; as a general rule we disapprove of all such, believing the benefit they may produce with a few, to be greatly overbalanced by the quackery which they invariably lead to with the majority by whom they are consulted. Mr. Hare, we are informed in his preface, has himself been the subject of disease of the spine, and has, in addition, enjoyed a long continued and extensive practice in that class of diseases, and we cannot but express regret at his having preferred giving to the world a work, which, though containing some sound advice, must nevertheless be looked upon as a mere advertisement for practice, rather than in favouring his medical brethren with a plain and unvarnished account of his practice and its results. Such works, we are sorry to find, are increasing in our own country; pamphlets and octavos, gotten up to serve as advertisements for practice, and containing a smattering of knowledge which the community had better be ignorant of, are widely circulated, and are even ushered forth by gentlemen whose talents and standing would lead us to expect better things of them. Such works we unhesitatingly condemn, and would wish the profession with one voice to do likewise.

G. W. N.

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Nerves of the Cornea.*—The cornea has been represented by M. HIPPOLYTE CLOQUET to be devoid of nerves as well as of blood-vessels. In 1830, however, SCHLEMM succeeded in tracing nerves as far as the margin of the cornea, though its density prevented his following them between its laminae. The investigation thus commenced has been pursued by M. PAPPENHEIM, who by a simple process, that of immersing the cornea in acetic acid, or a solution of caustic potash, has been able to trace nerves from the sclerotica into the substance of the cornea. That the nerves thus traced really belong to the cornea, the following facts appear to prove: 1. If the corneal conjunctiva is removed, the nervous filaments are seen on the inner, not on the outer surface of the corneal epithelium. 2. The removal of the iris and membrane of the aqueous humor makes no difference as to the ease with which the nerves may be seen. 3. The nerves are distinctly visible entering the margin of the cornea, but less so towards its centre, where they are ultimately lost between the laminae.

The nerves may be distinguished from the folds of the choroid which mark the cornea by being colourless, and of uniform thickness; from the fibres of the cornea by being smaller, more superficial, scattered, and arranged in plexuses. Internally they are covered by the membrane of the aqueous humor, externally by the fibres of the cornea. The readiest way of discovering them is to immerse the dissected cornea in water, placing it between two plates of glass, with its inner surface turned upwards—gentle pressure, and the light of a lamp are required, and at first a slightly magnifying lens will be desirable. The nerves will then be seen taking the course of the blood-vessels, and composed of fasciculi for the most part separate.—*B. and F. Med. Rev. from Monatschrift für Medicin, &c.* June, 1839.

2. *On the Injurious Qualities of Menstrual Blood and its Probable Causes.* By Dr. REMAK of Berlin.—This paper is chiefly useful for the information it affords respecting the composition of a fluid which few have either the inclination or the liberty to examine. The author adduces but little fresh evidence in support of the universal popular belief that menstrual blood can produce urethral discharge or other affections of the male genital organs; but he thinks that the occasional occurrence of these symptoms, of which he has no doubt, depends on the condition, not of the blood, but of the mucus with which it is mixed.

By microscopical examination of the menstrual fluid under various circumstances, he found that whenever it had a red colour, it contained blood-globules, and that the intensity of its colour depended on their number. At the beginning and towards the end of its flowing, when it is pale and whitish, it contains a preponderating quantity of laminae of epithelium and of mucus-corpus-

cles, but their quantity becomes proportionally less and less as the fluid presents more blood-globules and a deeper colour. The author believes that this mucus which is constantly present in the menstrual fluid, may, like the secretions of all mucous membranes when in a morbid state, possess the power of producing a similar morbid state in other membranes of the same kind. He relates a case which confirms this idea: a very obstinate gonorrhœa, in which the menstrual fluid of the only female with whom the patient had connection, and in whom there was not the least probability of gonorrhœa existing, contained an abundance of this pearl-coloured mucus. Connection did not produce the gonorrheal symptoms except when the female was menstruating. *B. and F. Med. Rev. from Medicinische Zeitung.* Dec. 25, 1839.

3. *A portion of a Fetus living upon the Testicle.* By M. VELPEAU.—The case on which I propose to engage the Academy to-day, is one of the most strange that the sciences of observation have yet had to consider; interesting at once to surgery, pathology, anatomy, generation, and physiology in general, it appears to be without parallel among known facts. It relates to a living portion of a fetus fixed in the testicle of an adult, where it seems to have been developed and to have lived since his birth. This is a peculiarity so contrary to what we know, and is at first glance so incomprehensible, that one might be justified in doubting its existence if I did not possess the substantial proof of it in the preparations here presented, and if the patient and the tumour had not been observed by several hundreds of practitioners and students, and if the operation had not been performed in the presence of 500 persons. The case is, in a few words, as follows:—

A young man, named Gallochat, of Eternay, aged 27, of a good constitution, and who had never suffered from any severe disease, was sent, in the middle of January, to M. Andral, who at once passed him over to my division in the Hôpital de la Charité.

On examination, I found that the patient had a tumour, nearly as large as a fist, on the right side of the scrotum. It appeared unconnected with the substance of the testicle; the skin over it presented no analogy to that of the scrotum, and it did not appear to me to belong to any known class of tumours. Although several surgeons thought it might be referred, some to the cancerous tumours, some to the fibrous, and some to the tuberculous class, I did not think it possible to adopt their opinion. Observing, moreover, that its origin dated back to the patient's birth, that it was not perceived at its commencement, that it never produced any pain, that no pathological process had been set up in it, and that it could be cut, or pricked, or pierced through and through, without causing the least suffering; taking notice also of the aspect of the skin which covered its external surface, of its elasticity, of the indurations which it presented internally, a tuft of hair which came from a kind of ulcer, at its posterior part, of a reddish tubercle, at the bottom of another opening anteriorly, and of a glairy or grumous matter which the patient had sometimes discharged; I came to the idea that it was a *fatid tumor, a product of conception*.

Wishing to obtain exact information on the earliest history of so singular a production, I wrote to M. Senoble, physician at Eternay, who answered me thus:—"At the age of about four months, the mother of Gallochat came to show me her child; he then had a tumour, or merely a swelling of the scrotum, which I found, to be only a pneumatocele. Some months afterwards, I found, on examining him again, a small inflamed tumour, which appeared to me to be a slight plegmon, and which yielded to simple emollient local applications. I heard no more of him till at the end of three or four years, when I learned that the child's tumour still continued enlarging." Now although these details were very incomplete, they yet strengthened me in my first opinion; which seemed so singular to those to whom I mentioned it, that I alone held it. I therefore planned the removal of the tumour without taking away the testicle, intending to perform a kind of *Cæsarean operation on the man*. The details of the proceeding belong entirely to surgery, and need not now occupy me; it may be sufficient to state that its results were satisfactory.

The examination of the tumour has enabled me to detect nearly all the anatomical elements of the body of a mammalia. Thus, its external layer is evidently cutaneous; the greater part of its substance is a mixture of lamellæ and fibres which give the idea of the cellular, adipose, muscular, and fibrous tissues. In its interior, we found two small cysts filled with matter like albumen or the vitreous humour of the eye; another cyst, as large as a partridge's egg, contained a greenish yellow and semiliquid matter like meconium; in a fourth sac there was a grumous substance, of a dirty yellow color, concrete, and surrounded with hair. The substance from this last sac, when analysed and examined with the microscope, presented all the characters of sebaceous matter and scales of epidermis. The hairs did not appear to have any bulbs at their bases. The tuft of hair which was seen externally, protruded from one of these cysts—from that which was filled with greenish matter; and the opening in it had some analogy with an anus.

Lastly, in the midst of all these elements, we found numerous portions of the skeleton perfectly organised, evidently belonging (as any one may convince himself by examining the preparation) to true bones, and not to accidental productions. These bones, which were every where enveloped by a sort of periosteum, and of which the several pieces were moveable upon each other, and had distinct articulations, may be divided into three sets. The first group is essentially composed of three pieces, in which I thought I could recognize the clavicle, the scapula, and a part of the humerus. The second group, much larger than the preceding, appears to belong to the pelvis, or perhaps to the base of the skull; the body of the sphenoid, or else the sacrum, forms the central portion. Lastly, the third series seems to comprehend portions of vertebrae and fragments of undetermined bones.

Whatever be the name that the different portions I have pointed out may deserve, certain it is that they belong to a product of conception, and to a fœtus already far advanced in its developement. They are before the Academy, and the correctness of the fact is absolutely incontrovertible. In the monstrosity by inclusion, as it is called, which has been described by Dupuytren, Geoffroy, and Olliver, one of the fœtuses absorbed by the other has always appeared surrounded by a cyst, and in the condition of a foreign body in the tissues of the fœtus which has continued alive. In the cases related by Saint Donat, Prochaska, and others, of the debris of fœtus contained in the scrotum, there have always been encysted tumours, necrosed bones, and organized parts destroyed by supuration and in a state of decomposition. In this subject, on the contrary, every thing has continued to live. The anormal tumour had its own proper colour, consistence, and sensibility, entirely independent of the individual who supported it; a clear well-defined line separated the integuments of its skin from the scrotum. I pinched it with all possible force; I pricked it with various instruments: the young man himself several times ran a knife into it, without feeling the least painful sensation; and yet all the wounds that were made in it, bled abundantly, inflamed, and cicatrised, like those of any other part of the body, and nothing indicated in it the least diseased condition.—The substances, and all the elements that were found in it, gave the idea of normal tissues or products, and we were quite unable to discover the existence of the least drop of pus, or of any carious or necrosed bone, any altered cartilage, or the least fungous production.

When, on the other hand, one observes that the tumour was as large as a fist—that the surgeon who saw the child when four months old scarcely took notice of it, and that he took it at first for a pneumatocele, and then for a little phlegmon, which terminated by resolution—it is difficult to believe that its volume was as considerable at the birth of the patient as it was at the time when I first saw it. Such a mass in an infant would certainly have attracted great attention both from the physician and the family. We must remember, moreover, that, according to M. Senoble's statement the tumour continued to grow at least up to the age of six or seven years, and that the young man, who says that

it always had the same appearance, can scarcely charge his memory so ar back as that time of his life: we must therefore conclude that the portions of the fœtus which I have described have lived and been developed simultaneously with the individual who bore them, and that there were thus two beings united to one another.

Now how could this take place? Did a part of the fœtus, the remainder of which has disappeared, become attached, during intra-uterine life, to the scrotum, in such a manner as to remain there in the form of a graft!—or can this be the remains of a fœtus which at first passed into the abdomen of another, and then descended by the tunica vaginalis, and has at last worn away from within outwards the envelopes of the scrotum!—or, lastly, have we here a creation, the unaided product, of the testicle? But I desist; these are delicate questions in high physiology and in transcendental anatomy, which I am neither able nor willing to broach till the preparations which suggest them have been submitted to the judgment of the Academy.—*Lond. Med. Gaz.*, March, 1840, from *Gazette Médicale de Paris*, Feb. 15, 1840.

4. *Cases of Twins where one had been long dead.*—The following example of this which occurred to Dr. C. Th. v. SIEBOLD of Dantzic, seems to be confirmatory of the views advanced by Dr. Porter in his interesting article inserted in the early part of this No. (p. 307.)

“An unmarried woman *ætat* 25, pregnant for the second time, was delivered of a stout boy at the full time, at 8 in the evening of Sept. 5, 1837. At the edge of the placenta there was a thickened flap of skin about an inch and a half long, and three-quarters of an inch broad, which was connected with the membranes of the ovum; there were no blood-vessels to be seen in this appendage, nor did it seem to be of a fatty nature. As Dr. Siebold did not know what to make of it, and this irregularity of the membranes of the ovum did not seem worth preserving, the afterbirth was put aside. The afterpains continued until 10 o'clock in the morning of the third day, when something protruded from the genitals having the appearance of a longish oval flap of the skin, of a pale colour, but with no perceptible smell of putrefaction; it was $3\frac{1}{2}$ inches long, and $1\frac{1}{2}$ broad. On more accurate examination Dr. Siebold found that it was a fœtus of about four months, squeezed quite flat. Its head was pressed together laterally, with the face turned to the left. The remains of the eyeballs gleamed with a blueish hue through the closed eyelids. The neck and trunk were flattened from before backwards; the ribs and their cartilages were easily distinguished, and not one of the former was broken. The right arm was bent obliquely over the chest, and pressed close to it. The right hand was perfectly formed. The left humerus was extended upwards behind the left side of the face, but the fore arm was lost. The right leg was turned upwards, so that feet and toes could be pretty clearly distinguished; but of the left lower extremity only the femur was left, with the muscles surrounding it. The external male genitals were also distinguishable. On the abdomen there was a remnant of the funis in the form of a flat and narrow ligament three inches and a half long, with the maternal extremity unattached and lacerated. The whole back of the body was as it were corroded, so that in many places the bones of the fœtus were laid bare.

“It was beyond all doubt that this fœtus was the twin brother of the child which had been born alive, and that both germs had been impregnated at the same time. One of the embryos died in the fourth month of its formation, and was gradually compressed against the internal surface of the uterus. The peculiar flap on the membranes of the child born at its full time may possibly have been the relics of the membranes belonging to the ovum of the fœtus which perished. Dr. Siebold is very sorry that he did not make a preparation of it. He doubts this being a case of superfœtation, indeed he doubts the possibility of its occurrence; and is inclined to believe that in most of those instances which are supposed to prove a superfœtation, either there were twins,

and one fœtus came into the world too soon, or too late; or else the case has been narrated so imperfectly as to prove nothing on either side of the question. So far Dr. Siebold. Dr. Meissner, who reports the above case in *Schmidt's Jahrbücher*, observes that even when both children are born alive and of apparently different ages, it is not a proof of superfœtation. He once saw a case where of two children born at the same time one was at the full period, and the other, though born alive, was apparently a seven months child, and weighed only two pounds and a half; yet both had a common placenta and a common chorion, but the amnion was double. This case proves that from some circumstance a twin child may be retarded in its growth. Immediately after this case we find one of the same class where triplets were borne. On the first of April 1838, says G. A. Michaelis, M. P. was prematurely delivered of two boys, both dead; on the 16th of July she was delivered of the third child of the triplet, who was alive and well when the case was reported in *Pfaff's Mittheil*, 1838, Hft. 9 and 10. *Lond. Med. Gaz.* April, 1840.

The following case was communicated to the Westminster Medical Society (Feb. 15th, 1840,) by Mr. STONE.

"Mrs. S., who had borne eight living children and one dead one, became pregnant for the tenth time. Nothing unusual occurred during the progress of gestation, which terminated at the time on which she had calculated. A full-grown child was born soon after commencement of labour. The uterus began to act again in about half an hour, and in the course of a short time a fœtus was expelled, of about six months or rather within that period, compressed and flattened, and not appearing to have lately lived, yet it was not putrid, nor had it any of those appearances of desquamation usually found in a fœtus which is believed to have remained dead in the uterus, under ordinary circumstances; the placenta followed in a short time, one part, which had contained the healthy fœtus, had its usual characteristics; the other part was small, and did not appear to have carried on any of its functions for some time; the vessels were shrunk and bloodless, but the membrane had been whole up to the time of labour, as was indicated by their appearance, as well as by the fact that there had been no vaginal discharge during the pregnancy. In this case the live child proved to be the most wretched idiot Mr. Stone had ever seen.—*Lancet*, Feb. 29, 1840.

5. *Transposition of the Thoracic and Abdominal Viscera, accompanied with an unusual Variety in the Vennus System.*—A. M. M. WHYKIE, relates the following curious example of this malformation in a recent No. of the *Lond. Med. Gazette* (April, 1840.)

"The subject was a female about 25 years of age, concerning whose history no particulars could be ascertained. Death was found to have been caused by acute inflammation of the lungs. The body, which was loaded with fat, presented no peculiarity externally.

"Attention was first drawn to the fact that there was misplacement of the viscera, from the complete absence of large intestine on the left side of the abdomen. On examining the right iliac fossa, the colon was found to ascend from a very large cœcum, which was rather more elevated than usual, the situation of its appendix vermiformis being reversed. The colon ascended in rather a tortuous course, into the right hypochondrium, whence, instead of crossing the epigastric region, it became folded suddenly upon itself, and descended close to the inner side of the ascending portion, to form a very extended sigmoid flexure. The large intestine being thus confined to the right side of the abdomen, was of about its usual length, and finally pursued its course along the middle line of the sacrum.

"The stomach was situated very obliquely; the larger extremity occupying the right hypochondrium, and the organ was curved to such an extent that its two orifices were very nearly approximated; the cardiac opening being placed a little to the right of the pyloric.

The duodenum descended first, a little obliquely, towards the right of the

vertebral column; then ascended in a line parallel to the other portion, and afterwards passed almost transversely to the left of the spine, so that the jejunum commenced almost in its usual situation. The small intestines were chiefly contained in the left iliac fossa. The superior mesenteric vein was placed in front of the two first and parallel portions of the duodenum, which separated it from the corresponding artery which was behind.

"Liver of about the ordinary size; the larger lobe, with which the gall-bladder was connected, placed in the left hypochondrium. The spleen consisted of three distinct portions, connected with the larger extremity of the stomach in the right hypochondrium. Each received one or more large branches from the splenic artery, which divided very near to its origin.

"Nothing very remarkable was presented in the appearance of the rest of the abdominal viscera.

"*Thorax.*—The heart occupied rather more the middle line of the chest than ordinarily, the apex pointing to the right side. The situations of the large vessels were completely reversed.

"The œsophagus descended to the left of the aorta; the thoracic duct, ascending also on the left of this vessel, formed a curve to terminate at the junction of the right subclavian and internal jugular veins.

"The left lung had three lobes.

"A remarkable feature in the case is the disposition of the vena cava inferior, which, after being formed by the union of the common iliac veins (in this instance as high as the first lumbar vertebrae), and, receiving the lumbar, renal, spermatic, and phrenic veins, entered the chest through the diaphragm, close to the left of the aortic opening. From this point it continued to ascend parallel with, and to the left of the aorta, and, arriving at a level with the arch of this vessel, curved forward over the left pulmonary vessels to join the vena cava superior.

"The thoracic portion of the inferior cava resembled, therefore, the vena azygos; it received the intercostal, bronchial, and œsophageal branches, and took the same course as this vessel when it exists.

"The vena cava hepatica united to form a trunk, which entering the chest through the left of the tendinous centre of the diaphragm, terminated separately in the reversed right auricle.

"The condition of the spleen is worthy of remark, as having been found imperfect in other instances of transposition of the viscera, and appears to be the only organ in which development has been arrested in these cases.

In the museum of St. Bartholomew's Hospital is preserved the preparation described by Mr. Abernethy in the 83d volume of the Philosophical Transactions, where there is a somewhat similar condition of the inferior cava in connection with the reversed position of the heart. The inferior cava passing through the chest on the right of the aorta, and pursuing the course of the vena azygos, the place of which it supplied, it received also the vena portæ nearly on a level with the renal veins. The veins returning the blood from the liver passed through the central tendon of the diaphragm, and opened separately, as in the above case, into the anterior auricle.

Several instances are recorded, and particularly by Krause, in his *Hanbuch der Menschlichen Anatomie*, of variety in the vena cava inferior, and supplying the place of the vena azygos, but apparently unconnected with any abnormal portion of the viscera.

6. *Lateral Transposition of the Abdominal Organs alone.*—The following example of the anomaly has been met with by Mr. CURLING. "A man aged 40 was received into the London Hospital 5th October, 1839, labouring under symptoms of disease of the heart, with general dropsy. He died October 12th; and on examination of the body, seventeen hours after death, the following appearances were found. The body was muscular and well formed, but generally anasarcaous. There were extensive pleuritic adhesions on the right side of the chest, and about sixteen ounces of serum. The left side contained full three

quarts of straw-coloured serum. Both lungs were composed of the usual number of lobes. The heart was in its normal situation on the left side, but very large. The pericardium was somewhat thickened, and contained about two ounces of serum tinged with blood. The left ventricle of the heart was greatly hypertrophied, and there was induration at the base of the aortic valves, but no further disease. Nothing remarkable was observed in respect to the large vessels immediately connected with the heart, and the arrangement of the parts in the posterior mediastinum was quite regular. The cavity of the abdomen contained two quarts of serum, with masses of loose albuminous matter floating in it. All the abdominal viscera were transposed. The stomach was of large size, and situated on the right side of the abdomen; its cardiac orifice, with the great cul-de-sac, being on the right side, and the pyloric orifice on the left. Its direction was somewhat oblique, so as to facilitate the junction of the cardiac orifice with the œsophagus, which entered the abdomen nearly in the usual situation. The pancreatic duct, and ductus communis choledochus, united and opened into the duodenum on the left side. The liver was found on the left side, the gall-bladder being connected to the left and larger lobe. The spleen was rather small, and on the right side; and there were four supernumerary spleens near the principal one. The cæcum, with its appendix, was on the left side; it was not confined to the iliac fossa, but was entirely surrounded with the peritoneum, and quite free and loose. The colon ascended across and in front of the small intestines, towards the right lumbar region, where it made a remarkable turn towards the spine, and then passed across to the left side, between the tenth and eleventh dorsal vertebræ, behind the small intestines, and external to the peritoneal cavity; so that in this part of its course the colon was uncovered by serous membranes. It afterwards made another turn on reaching the left side corresponding to the sigmoid flexure, and then joined the rectum. The kidneys were large, flabby, and glandular, and the right was situated higher up in the abdomen than the left. The chief vessels of the abdomen were also laterally inverted. The arrangement of the iliac and renal arteries and veins corresponded with the position of the abdominal aorta on the right side, and the vena cava on the left. The apertures in the diaphragm for the vena cava and œsophagus were in their usual relative position, though a little nearer the centre than ordinarily.—*Lond. Med. Gaz.* April, 1840.

7. *On the Sympathy between the Cerebellum and the Testes.* By Dr. J. BUDER.—It is well known that Gall places the organ of the sexual appetite in the cerebellum; and the remarks of subsequent physicians have often been directed to the subject, though without having yet arrived at any definite result. For even if one collects all the known cases of diseases of the cerebellum, as Burdach has done, one finds, indeed, that an actual affection of the sexual organs has occurred in no small number of such cases, but that in a great number, nay, even in the majority, none such has existed. In like manner cases have occurred to every observant physician which are favorable to such a connection of the two organs; and, again, others which, though in other respects similar, afford no such evidence. A more certain and incontrovertible proof is wanted; and I have at length succeeded, by experiments on numerous animals, in demonstrating this influence of the one organ upon the other, in the most simple, distinct, and certain manner.

For these experiments old cats are the best animals that can be employed; and they may be made upon them either during life, or still better immediately after death. The experiments were repeated so often that there could not be the least doubt in regard to their result; and though, in some animals, the phenomena were far more marked and distinct than in others, yet in all they were so similar, that the relation of one will sufficiently illustrate the whole.

In a 12 year old male-cat, who had been killed by a wound of his heart, the whole of the skull was removed as quickly as possible, and then the abdominal cavity opened, and both testes, with their spermatic chords and vasa deferentia, exposed; all of which occupied but a few minutes. Not the slightest motion

was observed in the testicles. I now stimulated the cerebellum with the point of the knife; and I had done so for scarcely so much as three seconds, when one testicle raised itself up, and moved from the spermatic cord on which it had lain, so as to form nearly a right angle with it. At the same time it became more and more tense. The more I irritated the cerebellum, the more the testicle moved. I stimulated hither and thither, but the two testicles were never moved at the same time. I soon discovered the cause of this remarkable fact. When I stimulated the right lobes of the cerebellum, and the right half of the commissure, the left testicle always moved; when, on the other hand, I stimulated the left lobes, and the left half of the commissure, then as regularly the right testicle rose up. I had thus the movement of the testes entirely under my control, so that I could make one or other move as I wished; and I continued the experiment for full half an hour.

The cerebellum is, then, the part at which the nerves of the testes have their terminal point; the nerves also cross each other in the brain as those of all the rest of the body do; and they must lie tolerably superficially in it, because a deep irritation does not succeed in producing the motion of the testes. It seems probable to me, that the union of the nerves takes place in the region of the first cervical vertebra, because stimulus of this part of the cord is very often accompanied by erection and discharge of semen, as in the hanged, &c.

This simple observation is of the greatest importance in many physiological and pathological phenomena. Thus from this connection, the hitherto inexplicable sympathy between the testicles and parotid gland is accounted for by nervous communication. Perhaps also the relation of the testes to the growth of the beard is explained by this connection, since the trigeminous nerve may be traced in its ultimate roots to the part where the union of the nerves of the male sexual organs may be conceived to take place; and the nervus trigeminus is distributed in the face, and, most probably, contains organic fibres which are concerned in the growth of the hair.

It cannot be thought remarkable, that in so many diseases of the cerebellum, the sexual organs should still not suffer. For, in the first place, the whole cerebellum is certainly not to be regarded as the central point of the sexual nerves, but only a part of it; and if this part does not suffer, the sexual organs will remain healthy; and, in the second place, one would be wrong in thinking that every disease of the cerebellum must act in such a manner on those organs, as to procure a distinctly observable disease.

One may suppose that if the part where the nerves meet were compressed, impotence would probably result; but how many men are impotent without even knowing it.—*Lond. Med. Gaz.* from *Muller's Archiv.* Heft 5, 1840.

8. *Growth of the Hair.*—M. MANDEL is inclined from some phenomena which he has observed in the growth of hair, to arrive at a different conclusion relative to this process, from that generally received. He states that, in individuals who have had their hair recently cut, each hair preserves its diameter to its free end, which presents a truncated extremity, where the eye may distinguish the section both of the cortical part and that of the internal canal. But if these same hairs are examined after a longer interval, each hair is found to be terminated by a pointed extremity, more or less long, but with its extremity closed. This change of form M. Mandl considers to be the result of a vital process, and as proving the possibility of a movement of fluids in the interior of the hairs. He thinks this opinion is still further supported by the fact, that when hair is kept long, instead of the formation of a pointed extremity, obliteration of the extremity of the canal alone takes place, which he supposes to be caused in all probability by the difficulty of the movements of the fluids.—*Comptes Rendus*, 27th Jan. 1840.

9. *Experiments on the Motor and Sensitive Roots of the Nerves.* By Dr. KROENBERG, of Moscow.—During my stay in Paris in July (1839), Prof. Magendie had the kindness to show me his recent experiments on the nerves, which he had communicated to the Academy. These, as made in my presence, I will

here detail, in the first place, and then notice my own experiments made some time afterwards.

1. M. Magendie laid bare the facial nerve of a dog near its origin and pricked it; at each prick a demonstration of pain was given. The nerve was then cut across, not far from its junction with the fifth pair. Pricking and pinching the cerebral end of the divided nerve produced no indication of sensibility; but pinching the other end obviously caused pain. It appears from this experiment that the sensibility of the facial nerve, as well after as before its union with the fifth pair, depends on this last, and not from any other anastomosis or the influence of the brain sent direct through its origin. M. Magendie then laid bare the roots of the lumbar nerves of a dog. The posterior roots were found as usual very sensible; the anterior were less so, still the dog whined and gave evident signs of pain each time they were pinched. M. M. then divided the motor root; pinching the spinal extremity of this produced no pain, but pinching the other (before its union with the sensitive root) caused the dog to cry out.

2. Some weeks after this I performed the following experiments on rabbits: The facial nerve before its union with the fifth was found sensible, at one time more so, at another less; on dividing it before its union, pinching its under (peripheral) end produced pain, yet not always. I then laid bare the lumbar portion of the spinal marrow, and found the motor roots sensible, but much less so than the sensitive. The following experiments, however, prove that the sensibility of the motor roots is not derived through fibres coming directly from the spinal marrow, but is dependent on the other (the sensitive) roots. When I stimulated the motor root, the sensitive root being undivided, pain was evinced, but when the latter was divided the same stimulus produced no sensation. Magendie's experiment equally proved this, and its repetition by myself confirmed the same. After division of the anterior root, the posterior being untouched, the under or peripheral end was always sensible, the upper not. The case is similar with the anterior column of the spinal marrow—pain being only produced when the posterior roots were uninjured.

In order to settle this point still more firmly, and to ascertain the course of the fibres, I made the following experiment; I made in the angle of union of the two roots a small incision, about half a line in extent, leaving both the roots untouched: it was then found that the same phenomena no longer took place; thus, the anterior root and the anterior column of the spinal marrow were now insensible, and on the division of the root both its ends were equally insensible.

This simple and easy experiment proves, first, that a portion of the fibres of the sensitive root extends to the point of union and is reflected back to the anterior column of the spinal marrow; and, secondly, that the return or reflection of the fibres takes place near the point of junction of the two roots.

[These experiments afford a satisfactory explanation of phenomena which have been very perplexing to physiologists. It has been almost constantly observed that some degree of sensibility appeared to exist in what Sir C. Bell regarded as exclusively the *motor* roots of the nerves; this sensibility being manifested by expressions of pain on the part of the animal when they were irritated. The sensibility of the portio dura has long been known, and was correctly attributed by Sir C. Bell to its reception of filaments from the fifth pair. A similar mixture of the filaments of the posterior roots of the spinal nerves with those of the anterior—these filaments passing *towards* the centre as well as *from* it—may be reasonably anticipated; and this supposition fully explains all the phenomena which have led Magendie and others to the opinion that the anterior roots are sensible. The supposed motor properties of the posterior roots are fully accounted for by Dr. Hall's discoveries; since irritation of these will produce reflex actions through the motor nerves distributed to the same parts.] *Brit. and For. Med. Rev.*, April, 1840, from *Müller's Archiv*. Heft v. 1839.

10. *Case of a woman pregnant with five children*—Doctor EVERY KENNEDY produced five fetuses, with their involucre, the product of a single abortion, at the

meeting of the Dublin Pathological Society, held on the 14th instant. The patient had been attended by his late assistant, Doctor Thwaites, and pupils of the hospital, and the facts of her case were accurately noted, so that deception was impossible. The specimen produced, Dr. Kennedy stated to be the multiparient conception of a female, who aborted when, as she stated, she was three months gone with child. The case was one in which there appeared to be three distinct ova; two of these were twins, the third was single, so that five fœtuses co-existed in utero. On examining the preparation, Dr. Kennedy remarked, that, closely viewed, it would be found that those on each side differed from the centre one. Each of the former possessed a common placenta, and membranes common to both, with an intervening septum; but the central one is distinct and perfect in itself, having its own placenta and membranes. Some persons have been disposed to question the occurrence of these multiparous births; and indeed it must be acknowledged that the popular opinions, and even recorded cases, on the subject, are sufficiently extravagant; as for instance, the Countess of Hannenberg's case, in which it was stated that 365 children were produced at a birth. But without taxing our credulity in these cases too far, we have undoubtedly a few well-authenticated instances on record, in which women have given birth to five children at a time. One of these, that of Giuseppe Califani, occurred lately at Naples; and we have the details of another, which took place in Franklin county, in America, about twelve years ago, recorded by Doctor Paddock. There is also said to be a similar preparation in the British Museum. It is extremely curious and interesting, as connected with the history of multiparous births, that in this respect Ireland preponderates over all other nations, and that the Irish females are unequalled in the ratio of their fecundity. The proportion of twin cases in Dublin, is one in sixty; in America (where, it is to be recollected, there is a large number of Irish emigrants) the proportion is one in seventy-five; in London it is one in ninety-one; while in France, "*longo intervallo*," it is one in 140. In proof of the rarity of five twin-children, Doctor Kennedy further remarked, that out of 140,000 cases recorded in the Lying-in-Hospital of Dublin, there is no instance of five children at a birth. There is one case of four, but none of five. It is a curious fact, that in the American case the mother was an Irish woman, and had recently arrived in America. It may, perhaps, be considered equally curious that in the case detailed by Doctor Kennedy the father was a man of small stature, *ætat.* about thirty, without any remarkable personal development, and by trade a *tailor*. The woman, the subject of the present memoir, whose name is Sarah Hickey, is twenty-eight years of age. She was married about two years ago, and within nine months after brought forth her first child. This conception was uniparient. After the lapse of six months she again conceived of the fœtuses alluded to; and observed that during the pregnancy she increased very rapidly in size, and suffered constantly from bearing down, which rendered walking or standing almost impossible. She had constant sickness of stomach—a symptom generally looked on as an evidence of compound pregnancy. As to the abortion, it would appear to have been produced by inordinate distension of the uterus for its period, which in its turn, led to parturient efforts, as the ova presented no morbid appearance. The fœtuses, which are all males, do not appear to exceed the development usually observed about the second month; and as Hickey menstruated on the 24th of May, and miscarried on the 26th of August, it is more than probable she over calculated the duration of her pregnancy. This preparation is in Dr. Kennedy's museum, in the Dublin Lying-in-Hospital.—*Dublin Journal Med. Sc.* Jan. 1840.

PATHOLOGICAL ANATOMY AND GENERAL PATHOLOGY.

11. *Remarkable Case of Ischuria Renalis, of Nine years' Standing, with Vicarious Vomiting of Urine.* By F. L. KREYER, M. D., of Dresden.—*S. B. ætat.* 25, six years after the commencement of menstruation, began to complain of

abdominal pain, general spasm, and difficulty in voiding urine and feces, succeeded by orthopnea, and symptoms of thoracic and abdominal inflammation, which were treated antiphlogistically. The bladder required the frequent use of the catheter. The patient suffered pain in the right knee, and was obliged to keep it drawn upwards towards the abdomen. Two years after, the legs began to swell, respiration became still more difficult, the urinary secretion ceased, and the patient vomited a fluid containing, according to chemical analysis, the principles of urine.

M. Kreysig now detected, in the right iliac region and near the spine, a tumour extending towards the liver, exquisitely painful to the slightest touch, and which the patient had noticed for four years. The bowels were invariably constipated; and twice a day (five, A. M., and six, P. M.) urinous vomitings occurred, preceded by dyspnea, so urgent as twice to require v. s. No urine was found in the bladder. Tepid baths, and mercurial and stimulating liniments to the region of the kidney, were recommended. During the time the patient was in the baths, the skin exhaled a very fetid odour. The tumour gradually enlarged, and grew softer.

The patient now returned home, and four months after (January 24, 1835,) informed M. Kreysig that the tumour had daily increased, become harder and more painful, and pointed in the epigastric region. Fluctuation was now evident, and in three weeks the abscess broke, during a violent spasm, discharging a large quantity of pus, which was soon after succeeded by an increase of suffering. In about six weeks, the urinous vomitings ceased, and urine was voided by the bladder. Shortly afterwards, the pain being then more than usually intense, with an urgent desire to evacuate the bowels, the patient expelled, per anum, a mass about as large as a goose's egg; resembling fat mixed with pus, and intolerably fetid. From this period, all abdominal swelling and pain ceased, and menstruation returned. In about three-quarters of a year, the health was entirely restored, not one of the former symptoms remaining. *B. and F. Med. Rev. from Hufeland's Journal, July, 1839.*

19. *On the Causes of Scrofulous disease.*—M. LUGOL is of opinion that accidental causes, have no necessary effect, and that there is at least reason to doubt whether they are of themselves alone sufficient to give rise to a scrofulous affection. Inheritance, on the contrary, is the most evident and the most common cause, and that which we are obliged to acknowledge in the great majority of cases.

M. Lugol regards the existence of scrofula in a child, as the certain sign of the family temperament, in consequence of which all the other children have the same original predisposition to the disease. If one examines what takes place in families, in which this temperament is indicated by the sign just mentioned, it is found that they are subject to great mortality: scarcely a fourth of the children attain the age of puberty, and it is not rare for very large families to be swept away at an age even much less advanced. Scrofula, in fact, presents itself as the most active source of destruction to the human race: there is no other malady whose victims are so numerous and so young.

After showing the essential characters of hereditary transmission, those which mark it, and it alone, M. Lugol passes to his inquiries on the causes of this transmission, in considering what is the state of health of parents who produce scrofulous children. He divides the facts that relate to this question into two orders; one relating to the original state of health; the other to the acquired state of health of the patients.

After having treated of scrofula in subjects born of scrofulous parents, and in those who are born of phthisical parents, he goes on to show that parents whose youth has been marked by scrofula, but who, at the present time enjoy very good health, often produce scrofulous children. He shows also that parents who do not themselves appear scrofulous, but who have brothers and sisters that are so, have often a scrofulous offspring.

M. L. has also seen that parents may never present any symptoms of scrofula

till after they have had scrofulous children; and he arrives at the conclusion that hereditary diseases never pass over a generation, which is contrary to the opinion generally received on that point.

In a second section, relating to the acquired health of the parents who produce scrofulous children, he treats successively of scrofula from syphilitic parents, a question on which he has accumulated very extensive information; then of scrofula from abuse of venereal pleasure; of that from too early marriages in each extremity of the social scale; of that from disproportion in the age of the parents; and, lastly, of that of which he has collected a great number of examples, and which almost invariably arises from all the marriages in which the man does not possess the comparative strength of his sex.—*Lond. Med. Gaz.* March, 1840, from *Comptes Rendus*, Jan. 1840.

13. *Case of disease of the posterior columns of the Spinal Cord.*—EDWARD STANLEY Esq. has communicated to the Royal Medical and Chirurgical Society a well marked example of disease strictly limited to the posterior columns of the spinal cord, yet producing phenomena at variance with the doctrine of the distinct influences of the anterior and posterior columns of the cord on the faculties of motion and sensation.

The disease, which was not the result of any injury, commenced about three years before the patient's admission into Saint Bartholemew's Hospital with impaired motion of the lower extremities, at first slight, but progressively increasing, so that at the time of his admission he could only succeed by a great effort in raising his legs from the ground while sitting in a chair. Before the patient's death the inability of motion became complete in each lower limb in its whole extent. In no part, however, was there any defect of sensation confessed by the patient, whether the skin was scratched, pricked, or pinched. On dissection after death, no signs of disease presented themselves except in the spinal cord. Here, contrary to the anticipations of the many persons by whom this case was observed (and much interest was excited with reference to it), no disease whatever was found in the anterior columns of the cord. An extensive change of structure and colour was, on the contrary, manifested in the posterior columns, from the pons to the lower end of the cord. "The value of this case," says the author, "consists in the distinctness of its phenomena, being acknowledged by many competent observers to have been such as they are recorded."

Dr. Budd related a case where similar circumstances were observed: that is, in a patient who had caries of the spine, motion in the inferior extremities was lost, while sensation remained; and, on dissection, the anterior columns of the spinal marrow were found apparently sound, while the posterior, at the seat of the disease, were softened and nearly fluid.

Mr. Shaw observed, that there were difficulties in the above cases which he did not pretend wholly to remove; but he begged to mention that recent investigations have shown, that it is not from the posterior columns of the spinal marrow that the posterior roots, the roots that confer sensation, arise. It is from another column, the lateral, that they, together with the sensitive root of the fifth cerebral nerve, originate.* Hence, if this view of the anatomy be correct, it is not so much to be wondered at, that sensation should remain entire, when the posterior columns are destroyed.

Another point in the discussion arose. Mr. Cæsar Hawkins brought forward the question as to the powers of nutrition in a part being impaired from the destruction of its nerve. He illustrated his position, by referring to M. Magendie's experiments on the fifth pair of the brain, wherein inflammation and sloughing of the eye followed from dividing this nerve within the cranium, thus apparently showing, that the fifth pair superintends the functions of nutrition.

Mr. Shaw expressed some surprise at the ready admission usually given to M. Magendie's conclusions from these experiments, when surgeons have such

* See two papers by Sir Charles Bell, in the *Phil. Trans.*, read May 1834, and April 1835. Also his work on the *Nervous System*, 3d edition.

frequent opportunities of observing the effects of destruction of the fifth pair in the human subject. He adverted to numerous cases that had come under his notice, where the fifth pair had been totally destroyed at its root by morbid changes, and where the sensibility and motion conferred by it were completely lost; and yet none of the effects described by M. Magendie were observed. The changes in the eye, he thought might be satisfactorily explained by remembering the proneness of this part to inflammation, and attending to the natural consequences of its being deprived of sensibility. The sensibility in the conjunctival membrane of the eye is provided for the defence of its delicate structure; and when this is lost, foreign objects lodge between the eye-lids and inflame the eye, without causing pain. To show the importance of this consideration, he referred to the case of a female who had dropping of the upper eye-lid (ptosis), combined with insensibility of the eye from affection of the fifth pair. This woman was for several years under his observation, and the eye continued all the time perfectly sound, owing, he presumed, to the organ being so completely protected by the eye-lid which covered it. In another case, where the ophthalmic branch of the fifth was wholly destroyed in its passage through the foramen lacerum, causing a total loss of sensibility in the surface of the eye, and where ptosis existed for a certain time, the eye was free from all signs of inflammation, as in the previous case. But after a considerable period, the portio dura became affected; so that the orbicularis oculi was paralysed; the lids, consequently, remained open, and the eye became exposed. Now, from that time, inflammation of the eye commenced; and its surface was finally covered by thick granulations, which protruded between the eye-lids.

Sir B. Brodie and Mr. Hawkins related cases in which disease, in one amounting to sloughing, of the parts above the little finger, followed after the excision of a portion of the ulnar nerve.

Mr. Stanley met the objections made to M. Magendie's conclusions, by referring to a case published by him in this journal, in which a patient had rapid destruction of the eye from sloughing of its textures; and it was found upon dissection, that the root of the fifth pair was involved in a tumor lodged upon the pons varolii.—*Lond. Med. Gaz.*, Feb. 1840.

14. *Spontaneous Rupture of the Spleen.*—An example of this is recorded by Dr. NÄCKEL in the *Medicinische Zeitung*, May, 1839.—The subject of it was a young man 25 years of age who had an attack of diarrhœa, which was not relieved by opium or saturnine preparations. After five days continuance, the abdominal pains became so severe, that he was forced to confine himself to bed. Next day he was seized with a sensation of sinking, cold sweats, &c., and died in a few hours. On inspection of his body forty-eight hours after death, a large quantity of blood was found effused into the cavity of the abdomen and pelvis, which had proceeded from an angular rent of the spleen of about four lines in extent, situate at the inferior margin of its anterior or external surface. The spleen was about five inches long by four broad; of a livid color, and with its tissue softened.

15. *On the various circumstances which appear in the course of Diseases, to produce the curved form of the Nails.* By M. VERNON.—This paper is sufficient to determine the value, or rather the want of value, of curved finger-nails as a sign of disease. The results, obtained from the examination by the numerical method of 276 cases of various diseases, are as follows:

In any collection of patients, whatever be their diseases, curved nails will be found in at least one-third. Among different diseases, phthisis, scrofula, and other chronic affections, have a very marked, though not an absolute or constant influence. Of eighty-eight patients with curved nails, seventy were phthisical or scrofulous; and of 188 with normally formed nails, 40 were suffering from the same conditions. Of the same eighty-eight, nine only laboured under acute diseases. Females present this alteration about three times more frequently than males. It is most commonly observed between the ages of ten and thirty.

Occupation has no influence upon it. The constitution which coincides with it in five-sixths of the cases in which it occurs is that which is marked by a pale, fine, and anæmic skin, blond hair, blue or brown eyes, bluish sclerótica, very long eyelashes, and weak muscles.—*British and Foreign Medical Review*, from *Arch. Gén.* Nov. 1839.

MATERIA MEDICA AND GENERAL THERAPEUTICS.

16. *Effects and mode of application of Suppositories.* By Dr. OSBORNE.—When substances are introduced into the rectum, by the simple instrument, consisting of a tube and moveable rod inside, very different effects may be expected from the same when introduced *more majorum* by the finger. In the former case it is lodged above the sphincter, and much less mechanical disturbance accompanies it than in the latter, which is in all respects a detestable process. In irritation of the bladder, or painful affections of the uterus, two grains of the watery extract of opium, with six of soap—or, in spasmodic states of the urethra, a grain of extract of belladonna, are attended with marked benefit, and are productive of no inconvenience. It has been an old established practice among nurses, in case of refractory children, to introduce a fragment of soap with the finger, and generally the necessity of giving purgatives is in this way for the time avoided; but on consulting authors, I find no account of purgative suppositories for adults, except some intended to cause the expulsion of ascarides from the rectum,* since the time of Hippocrates, who is said to have composed them of salt and colocynth.

Being desirous to ascertain to what extent purgatives would act, when introduced into the rectum in the form of suppository, I in the first instance fixed on assafœtida, and ordered it to be introduced by the tube and rod in eleven cases.—It succeeded in all, producing one or two dejections, except in two, in whom it failed, and in one individual, who suffered much from flatulent distension of the colon, it was attended with much relief superior to that afforded by other purgatives. This may be ascribed to the volatility of the agent, which, diffusing itself through the colon, produced a general stimulation and contraction of the same, and being in the solid form, did not expend its volatile parts with so great a rapidity as to cause its premature expulsion, as occurs in the case of the fœtid enema. Hence in the numerous hysterical and dyspeptic affections, in which great annoyance is experienced from the pressure of an elastic tumour in the left hypochondrium, consisting of the arch of the colon distended by gas, beyond its capability of contraction, much benefit may be derived from the prolonged presence of the vapour of assafœtida, and from a perusal of the experiments related by Joerg† to have been performed with this substance, it appears the best adapted for producing an equal and universal contraction of the gut, the want of which is evidently a main cause of the distressing sensation just mentioned.

Suppositories consisting of one grain of elaterium in nine of soap, produced in two cases four dejections, in two caused one full dejection, and in one failed.

A suppository of two drops of croton oil added to soap, in a case of obstinate bowels, caused three full dejections, commencing in about ten minutes after its insertion. On a repetition, it caused the expulsion of one hard fecal lump, and was followed by tenesmus. In another case I formed a soap of croton oil and caustic potash, and having dissolved it in a large quantity of water, ordered it to be injected as an enema. These observations, in connection with some made previously, tend to show that croton oil is not well suited for this purpose,

* Gambii de Methodo concinnandi Formulas, Lug. Bat. 1767, p. 433.

† Joerg Materialien zu einer künftigen Heilmittellehre, p. 366. This excellent work is well named "Materials." I hope to make frequent use of the experimental portion as such, but while placing an implicit reliance on the facts, I shall have to offer different explanations of them from those given by the able author.

and that if retained, it may cause serious irritation of the rectum.—*Dub. Journ. Med. Sci.*

17. *Belladonna in flying Rheumatic pains.* By JONATHAN OSBORNE, M. D. of Dublin.—There is one property of belladonna, which I mentioned in a medical report of Sir Patrick Dun's Hospital in 1831, and which it has proved itself to possess in every instance, without exception, since that time; so that it is unnecessary to detail cases on the subject. It is this, that it causes an immediate cessation of the migratory or flying pain of rheumatism, without producing any effect on the fixed pains. In this way it acts like a charm both in acute and chronic cases, and when it is recollected that in acute rheumatism, especially, the greater part of the suffering, and that most refractory to ordinary treatment, is the perpetual shifting of pain along the direction of the muscles from one joint to another, its value in all such cases will at once be admitted. The dose I give is one-third of a grain, thrice daily, increased to half a grain every third hour.—After trying various combinations, I prefer to give it in simple extract of gentian, as much as is sufficient to secure its accurate division into pills. Having observed its efficacy to be confined to the pains shooting along the direction of the muscles, and that any abatement of pain which it produces in neuralgia, or where the pain pursues the course of the nerves, is of a very inferior degree, and attended with great uncertainty, it appears to me that it acts on the muscular fibre belonging to the voluntary muscles, as on the iris, and by stopping the spasm which is always present in severe cases, causes a cessation of the peculiar pain. This kind of pain always resembles fatigue, causing general restlessness and inability of remaining long in one position; and suggests very much the sensations experienced after excessive muscular fatigue, when the spasms, not of entire muscles, but of fibres, prevent sleep, while at the same time they produce a feeling of intolerable weariness.—*Ibid.*

18. *Emetics of Ipecacuan in hæmorrhage.*—Dr. OSBORNE states that this treatment in menorrhagia has never as yet failed in his hands, except when the progress of the case afterwards proved the formation of scirrhus or cancerous structure of the uterus. "The remarkable effects of emetics of ipecacuana in restraining hæmorrhage," he adds, "is not confined to this organ. In a case of violent epistaxis, in which several remedies were ineffectual, I tried it while preparations were going on for plugging the posterior nares, and with success, so as to render that measure unnecessary. In hæmoptysis, I am unable to add to the facts already known respecting its efficacy, being of opinion that hæmorrhage from the lungs is always salutary, and that the practice of giving the mineral acids, &c. to discourage it in phthisis is injurious. A very considerable benefit is generally perceptible, after the vessels of the diseased lung have been unloaded by this discharge. When, however, a violent hæmorrhage takes place from the lungs, and blood is expectorated in such quantities as to endanger life, then all our efforts must be directed to its suppression. In a late case (not phthisis) I failed with the emetic, but as I lost sight of the patient subsequently, I am unable to pronounce as to the cause of the hæmorrhage, and therefore as to the cause of the failure."—*Ibid.*

19. *Thread Setons.*—Dr. OSBORNE of Dublin has adopted a plan for setons which he thinks generally preferable to that usually adopted, as productive of less discomfort to the patient. "It is to make a seton with an ordinary sewing needle of the thickest kind, and one thread of oiled silk. This is passed through a piece of the skin held between the finger and thumb, about six inches of the thread being allowed to remain. In twenty-four hours considerable redness comes on, and in a few days a purulent discharge is set up, much more in quantity than a comparison between the size of it and of the ordinary seton might lead to expect. The opening gradually enlarges, and no doubt in process of time, like the perforations made in the ears for ear-rings, assumes the function and secretion of a mucous membrane. The trifling degree of pain, however,

inflicted by the operation, enables us to multiply those setons, and to substitute new for old ones, so that I think it is evident that in this way a greater discharge and a more efficient counter-irritation may be maintained, with less inconvenience than by the ordinary setons, and in places where the former would be impracticable.—*Ibid.*

20. *On the Employment of the active principle of Elaterium in Medicine.* By Dr. GOLDING BIRD.—M. MORRIS discovered the existence of a white crystallizable matter in elaterium, a formula for preparing which is given by Senbeiran. Dr. Brett informs Dr. Bird that the best mode of preparing elaterine is to boil the crude drug in alcohol, and evaporate the fine green tincture thus obtained to dryness; a mixture of green resin, with a bitter matter soluble in water and elaterine, is left, and on digesting the whole in a solution of potass, the two former substances are dissolved, and the latter is left in the form of a white crystalline powder. Its taste is bitter, it is scarcely soluble in water, it dissolves in boiling alcohol, and, if in excess, is precipitated by cooling (3ij. of rectified spirit are barely sufficient to hold one grain in solution when cold); it dissolves in ether in small quantities only; in spiritus etheris nitrici it dissolves with the aid of heat. Water precipitates elaterine from its solutions in alcohol and spirits of nitre, unless it is present in very small quantities; in liquor potassæ it does not dissolve, at least in any appreciable quantity, nor does it appear to yield to the solvent power of dilute acids.

From a series of experiments on the most convenient mode of forming a preparation of elaterine for medicinal purposes, so as to permit its administration in minute doses, the following formulæ were ultimately adopted.

Solutio Elaterin. R. Elaterinæ, gr. iv; Spiritus rectificati, f 3iv; Solve opæ leni caloris, f 3es; Continet gr. 1-16 Elaterinæ.

Pulvis Elaterinæ compositus. R. Elaterinæ, gr. iv; Potassæ bitartratis, 3x. 3ij; Misce accuratissime 3es; continet gr. 1-16 Elaterinæ.

After many trials 1-16th of a grain appeared a fair dose to begin with. Given every two hours, two, or at most three or four doses, always proved active, producing copious watery evacuations without griping, or any inconvenience, except in some cases vomiting where great gastric derangement had previously existed. During the action of the medicine, slight increase in the frequency of the pulse usually occurred, a circumstance generally observed during the administration of Elaterium. Dr. Bird adds, that the elaterine is not liable to the inconstancy of action which characterizes the crude elaterium, and does not produce vomiting or griping.—*Med. Chir. Rev.* from *London Medical Gazette*, March 13th 1840.

21. *Action of Ergot applied externally—its power in arresting hæmorrhage.*—Samuel WRIGHT, Esq., in an elaborate memoir on the physiological action of ergot in the *Edinburgh Medical and Surg. Journal*, states that “when applied to the sound skin, ergot does not appear to produce any sensible effects whatever. I have kept it in a state of moisture, in contact with the inner side of a dog’s thigh, (the part having been previously shaven, and well-washed with soap and water;) and repeated it night and morning for a fortnight without occasioning any perceptible alteration in the part, save a little redness. I have also worn it in a similar state, in contact with my own arm, for more than a week together, and have felt no inconvenience from its presence.

“Applied to an abraded surface, however, it gives rise to profuse sloughing. I have tried it upon wounds nearly healed, and in less than twenty-four hours they have discharged purulent matter abundantly. The matter has generally been of a very offensive nature, and the wounds thus treated, have, even under the application of proper curative means, been long and tedious in healing. In the form of powder it is very serviceable in arresting hæmorrhage. Its mechanical influence has doubtless some share in the effect; but it does not entirely

depend upon it, for the efficacy of flour, or any similar material, is not nearly so great. I have tried many comparative experiments, and have found the ergot succeed, when other simple powders have failed.

"Even in the form of infusion, it has the power of arresting hemorrhage in an extraordinary degree. Whilst trying my experiments upon dogs, I repeatedly observed a subsidence of bleeding from the divided vessels of a wound, after a solution of ergot, from entering a vein with difficulty had trickled over the part. But I was not led to an investigation of the circumstance, until I saw a report of some interesting experiments upon the subject by Dr. Müller.

"He divided the popliteal artery in a sheep, and completely arrested the bleeding with lint dipped in an infusion of ergot. The caudal artery of a horse was cut, and the bleeding similarly subdued. The anterior crural artery was also divided, and its stream of blood with equal facility arrested.

"To these experiments I may add, that I have several times divided the external jugular and the *vena saphena major* veins; and have never failed to arrest the hemorrhage by an infusion of ergot; though with arteries I have generally been less successful. And in the greater number of my experiments, I have used a dilute solution of ergot in the place of warm water, to sponge the incised parts, and have always succeeded in preventing that continued flow of blood, which is often a serious obstacle to the safe direction of the knife.

"As I have never found any impediment to the healthy union of parts treated with an infusion of ergot, I have no hesitation in advising it as a valuable means of preventing the troublesome hemorrhage from small vessels, in the course of surgical operations.

"And upon the same principle, I believe the injection of a similar solution into the uterus, in cases of flooding, will be found to answer every practical end that can be wished for."

SPECIAL PATHOLOGY AND SPECIAL THERAPEUTICS.

32. *Nervous Head ache from Exhaustion, and its Treatment with Aconite.* By THOMAS H. BURGESS, M. D.—After some preliminary observations on the causes of the different varieties of cephalalgia, Dr. Burgess stated that there were two conditions of body which appeared to him to be intimately associated with that form of nervous headache under consideration. The one was characterized by general anæmia; the other, by the debility consequent upon nervous exhaustion.

The former obtains more particularly in individuals who lead a sedentary life, who are ill fed, and who live in a close, confined, and unhealthy atmosphere; but it is by no means confined to this class of society, for in the middle and upper ranks the same bloodless condition of the system is frequently induced by different but equally pernicious causes. In the latter classes females are particularly obnoxious to nervous headache, arising in a great measure from confinement and want of bodily exercise during youth; and this predisposition to the complaint "grows with their growth," if not checked in time, and finally renders them liable to distressing attacks of cephalalgia, on every, even the slightest, provocation. The countenances of these individuals (continued the author) are quite characteristic—the eye-brows are depressed, the eyes are sunk and lack-lustrous, the cheeks are blanched, the lips are bloodless, and the entire face wears the aspect of depression, and denotes an incapability of action. The favourite position of persons so affected is sitting with the head leaning upon the hand, being glad of the soothing effects of the support and pressure obtained by this means. Before breakfast, and in the fore-noon, are the periods they are most usually attacked.

After describing the nature of the pain, and the procession of symptoms commonly observed in these cases, Dr. Burgess went on to say, that debility consequent upon nervous exhaustion, the second condition of body mentioned as

associated with nervous headache, is by far the most fruitful source of the complaint. The moral exciting causes of this state are numerous. Anxiety, affliction, dissipation, grief, despondency, mental fatigue, disappointment, sudden reverse, despair, &c., in short all the passions which tend to depress the vital powers, induce a state of nervous exhaustion. Individuals of more advanced years than the former class (observes the author) of the nervous temperament, and of a high state of sensibility, are those who suffer most frequently from this variety. They describe the pain, in severe cases, as racking and exhausting, with occasional acute twitches, and excruciating exacerbations, which are generally induced by motion, by sound, or by increase of light. There is also vertigo or giddiness, the sight is dim and confused, and black spots are seen rolling before the eyes; they are wholly incapable of mental or bodily exertion; they are sad, morose, and irritable in the extreme, and seek in repose and in solitude for an alleviation of their sufferings. The countenance of the patient is expressive of the most supreme misery. It indicates melancholy and despondency, and sometimes even assumes a suicidal aspect, and this outward and visible picture is but too often a faithful indication of the state of the feelings and emotions of the mind. Harassed by a succession of gloomy thoughts, abject fears, and dread of madness, the martyr to nervous headache frequently experiences in the paroxysms of the complaint, an overwhelming sensation of weariness of life, and feels as if the only relief to be obtained from his afflictions was to be found in the oblivion of the tomb. The workings of the moral feelings are stamped upon the countenance; and in acute attacks, the drooping of the head and features, the frowning of the cheeks, and the dragging of the commissures of the lips and eyelids, heighten the picture of wretchedness.

Treatment.—The author begged leave to introduce to the notice of the society a drug, the extract of aconite, which he found for several years past of the most incalculable service in the treatment of cephalalgia. It was not his object to extol this remedy as a specific in the complaint; he merely wished to draw the attention of members to the subject; and those who wished, could, with little trouble, put his statements to the test, and judge for themselves of the real value of the medicine, in cases similar to those which he had the honour of relating to the society. Dr. Burgess stated that he found the beneficial effects of the aconite materially promoted by the prior administration of the aloes and myrrh pills, in a small dose, so as to open the bowels gently, and encourage their peristaltic action; at the same time he took occasion to observe that he agreed with Dr. Copland that the digestive organs were considered much too generally as the source of the disorder. He also strongly recommended, in cases of young females, kalisthenic exercises, commencing with the gentlest, as urged by Mercurialis, and attention to the quality as well as to the quantity of the food.

The author stated that he usually commenced with half grain doses of the fresh extract, repeated every two or three hours. The preparation, by being kept for any length of time, loses, in a great measure, its remedial powers, and becomes black; hence, the dark colour of the extract commonly found in the shops. After noticing the different effects produced by this drug on the system, and the relative advantages of the alcoholic and watery extracts, the author concluded, by relating three cases of nervous headache, successfully treated with aconite.—*Lond. Med. Gaz.* Feb. 1840.

23. *Memoranda on the Treatment of Apoplexy.*—Dr. JOURDAIN, the author of the following observations, very justly remarks in reference to the treatment of all diseases, that "no sound therapeutics can exist without an accurate knowledge of their pathology, or, in other words, of their organic causes. Without such a knowledge, practical medicine is nothing better than a methodic empiricism." It must be acknowledged that even in the management of not a few maladies, whose real nature and cause are tolerably well known, it is impossible to lay down any definite line of practice, applicable to every case and to all circumstances. Of no malady is this remark more strictly true than of the hæmorrhæ-

gic apoplexy of aged people. The too common practice of at once resorting to blood-letting, whenever the supposed symptoms of this disease are present, is now admitted by almost every intelligent physician to be alike most unscientific in theory, and most pernicious in practice.

Before examining this point we shall very briefly mention the views, which seem to us the most rational, as to the nature of *encephalorrhagia* in old people.

Cerebral hæmorrhage in old people results from the rupture of a blood-vessel or blood-vessels, which have become altered in their texture, either from cretaceous concretions in their parietes, from ulcerations, or lastly from the softening of the cerebral substance itself. If apoplexy resulted from a simple sanguineous exhalation, as many physicians seem still to believe, it would surely be more frequent in young than in aged persons. But this we know to be certainly not the case: genuine *encephalorrhagia* being very rare in early and in middle age. Again, how often does an attack of apoplexy take place most unexpectedly, when the patient was, almost the very minute before, in seeming perfect health, and at a moment when his circulation was quite tranquil and undisturbed! The disease may in some instances be induced by causes, moral as well as physical, which tend to increase the rapidity and impetus of the cerebral circulation; but it is equally true that very often it suddenly occurs without any such premonitory phenomena. In a few instances indeed the blood-vessels of the brain have actually been found on dissection to be nearly empty of blood. (*Abercrombie.*)

With respect to the causes of cerebral congestion, Dr. Jourdain suggests that they may be well arranged in the following manner:—

A. Encephalopathy.	Idiopathic	{ Mental affections.
	Sympathetic	{ Alterations of the Blood.
		{ Indigestion.
		{ Constipation.
		{ Sexual intercourse, &c.

B. Obstacles in the course of the blood.	{ Diseases of the heart.
	{ Influence of cold on the surface, &c.

He then proceeds to offer some remarks on the treatment of the various forms of cerebral congestion, which arise from the different various causes now enumerated. He is, we may remark, decidedly opposed to the detraction of blood, when the disease is manifestly attributable to any intense mental or moral emotion of the mind, as fear, surprise, grief, or excessive joy, remarking, "It is either by the intestinal discharges or by cutaneous transpiration that nature seems to obviate the effects of fright. Tears, it is well known are the natural relief of grief. Again, a sudden diarrhoea will often save from convulsions infants, when their nervous system is much excited by painful dentition. In short, the secretory and excretory symptoms seem designed to give an exit to the nervous fluid, when it has become suddenly accumulated in any of the internal organs. If, however, severe mental emotions should induce inflammatory phenomena, it may be necessary to have recourse to blood-letting to relieve the symptoms. But on the whole, it is better to employ in most cases soothing medicines, rubefacients, &c., and especially endeavour to imitate nature by promoting certain secretions. *Quo natura ducit, eo ducendum.*"*

Passing over Dr. Jourdain's remarks on the influence of alterations in the condition of the blood itself, and also of indigestion and constipation, in inducing cerebral congestion, we proceed to what he says of the treatment of those cases, where the disease is connected with organic disease of the heart—his object, be it remembered, being all along to point out the inefficiency and danger of blood-letting in many of the forms of apoplexy.

* The English reader will object to part of the reasoning in this extract; still there is some practical truth in the remarks.—*Review.*

Alluding to the opinion that hypertrophy of the heart is a frequent cause of cerebral disease—an opinion, by the bye, which has been most perseveringly combated by M. Rochoux—he quotes passages from several distinguished writers who have pointed out the evils of indiscriminate blood-letting. The following extract from Andral is certainly pertinent to his purpose:

"The mere size," says this distinguished pathologist, "of a muscle is not the only condition or element of its energy. If this be true, the reader will perhaps at once perceive how much it must influence our medical practice in the treatment of diseases of the heart in aged people. Blood-lettings should not be employed in their case but with great caution, and only as a mechanical means to relieve the oppression of the vascular system. When carried to a large extent, they are almost always essentially hurtful; whereas stimulant medicines may often be employed with most advantageous results."

Rostan has also strongly expressed a similar opinion in these terse words, *il faut être avare du sang des vieillards*; and in another passage he says: "the cure of cerebral hæmorrhage must depend on the absorption of the coagulium. Now, in order that this may take place readily, the body must have a certain degree of force or energy. As this force is necessarily feeble in old age, how can the absorption take place, if the system be still further reduced by debilitating measures?"

Piorry likewise writes thus: "Drastic purgatives diminish the quantity of the circulating fluids. They have this advantage over blood-letting, that they drain off the serosity of the blood, without affecting its fibrinous portion."

Laennec has quoted from Corvisart a case which is strongly confirmatory of the good effects of drastic purgatives in some extreme cases of diseased heart, accompanied with dropsical effusions.

A man whose speedy death, Corvisart considered inevitable from such a state of complicated mischief, and who had not obtained any relief from blood-letting or the use of diuretics and various other medicines, applied to a charlatan who had acquired quite a reputation, in the faubourgs of Paris, for the cure of dropsy. This man gave the patient a strong drastic powder, mixed up in two ounces of brandy: it acted upwards of twenty times on the bowels. A similar dose was repeated every day for a week. Under this regimen, the serous diathesis was completely overcome, and the patient lived for ten years afterwards in a very tolerable state of health.

The great scope of Dr. Jourdain's paper is to recommend the use of drastic purges and also of emetics in the treatment of almost every form of apoplexy, when the constitution is not too much enfeebled. In some cases the employment of stimulants, he says, especially of ammonia, and of depurative bitters, such as *polygala*, *trifolium aquaticum*, *marrubium*, &c. along with, strong purgatives, is productive of the most beneficial effects. By such treatment a powerful derivative action on the bowels is produced, and the absorbent system is thus stimulated to remove the effused fluid. Abercrombie has justly remarked that the first amendment in a case of apoplexy is usually obtained by the action of energetic purgatives; and the same distinguished author—not to mention others, as Sydenham, Boerhaave, Lieutaud, &c.—approves of the use of emetics. Moulin regarded this class of medicines as so very useful that he proposed the injection of them into the veins, if vomiting could not be induced in the ordinary way. On this proposal Abercrombie remarks that, "this practice must be founded in observation and experience." Dr. Jourdain recommends that they should be repeated at intervals of twelve hours or so. The doses should be large and efficient.

He very judiciously observes,

"Before having recourse to any evacuates in the treatment of apoplexy, ice should be laid upon the head, and at the same time blisters on the arms and sinapisms on the legs."

He again alludes to the good effects of free doses of ammonia, in those cases of cerebral congestion which are brought on by mental emotions or by indigestion. But when the disease is at all connected with obstruction to the return of the venous blood, this, as well as all other stimulants, should be avoided.

Portal has observed that "several patients, who have consulted me, have been preserved from apoplectic attacks by the use of sudorific decoctions, sharpened by the addition of liquid ammonia."

Such practice, with the occasional use of emetics, is far preferable to the use of strychnine and other such poisonous substances, in the treatment of palsy.—*Medico-Chirurgical Review*, from *Bulletin Med. Belge*.

24. Epidemic Aphthous Inflammation of the Mouth.—This epidemic prevailed very extensively in the Foundling Hospital of Brescia in Italy during the Autumn of 1837. Its development was preceded by an epidemic of purulent ophthalmia, which had scarcely subsided, before the aphthous epidemic made its appearance among the children.

Its invasion was often so rapid and unperceived, that the whole surface of the tongue and inside of the mouth were found covered with vesicles in children, who had seemed quite well only a few hours previously. The precursory sign of this eruption seemed to consist in a more or less highly reddened state of the mucous membrane. The children became restless, refused their food, and began to pine. Often, while sucking, they quitted the nipple; and then the nurse usually experienced a sensation of burning in and around it. The colour of the tongue and gums became of a darker red, or of a livid hue. Then a few white points were observed on the apex and edges of the tongue and on different parts of the lining membrane of the mouth. These white points became gradually larger, and assumed the appearance of very minute mushrooms (*champignons*), resting on a narrow solution of continuity—hence this form of the disease has acquired in France the name of muguet or millet. When the white points extended in size without becoming at all elevated, and ooze out a whitish secretion, the disease has a more strictly aphthous character.

The greater number of authors have confounded these two forms of the disease together; but, according to Dr. Girelli, the reporter of the present remarks, they are different both in their origin and in the mode of their development.

The pseudo-membranous secretion was in some cases so widely diffused that not only was the entire surface of the tongue and of the inside of the mouth covered with it, but it even extended down the œsophagus. Here and there the mucous membrane of the cheeks exhibited a deep red, almost black, tint, and at the same time a remarkable dryness. There was also great heat, as might be readily discovered by introducing the finger into the mouth.

The lips and the tongue became hard, dry, and parched; the infant could no longer suck; and if it did but for a moment, the nipple of the nurse became hot and painful. In the bad cases, the extremities first and then the body became cold; and, before the death, the head sometimes felt as if the finger was placed on a piece of ice. Vomiting was not an unfrequent symptom; perhaps the inflammation had extended along the œsophagus to the stomach.

The duration of the disease was very various; from two to twelve days. The mere length of the disease seemed however to have little to do with its fatality, as many of the worst cases ran their course in two or three days.

From the preceding description, we may very properly designate this epidemic malady as one of *stomatitis aphthosa*, affecting more especially the follicles of the mucous membrane of the mouth.

The number of children under Dr. Girelli's care was 31; of which 14 occurred in September, 6 proving fatal; 7 in October, one only proving fatal; and 10 in November, all which recovered. It is a general character of such diseases that they are more severe at the commencement than towards the decline of the epidemic.

Dr. Girelli had reason to believe that the disease was readily communicated to healthy infants, by applying them to the same breast at which infants, already affected with the disease, had sucked. Hence the importance of separating the healthy from the sick, and of not permitting the same nurse to suckle both.

In the treatment of this disease, it is the first duty to ascertain whether the aphthous eruption in the mouth is associated with an inflammatory affection of

any of the internal viscera; and, if such be the case, whether the eruption be primary and idiopathic, or secondary and consecutive.

Dr. Girelli strongly recommends the local application to the mouth of some emollient—as almond oil, or the syrup of succory with rhubarb. Recourse was also had to an emulsion of melon seeds, to which was added tarrate of antimony in minute doses. In this manner, the tendency to gastric disturbance was obviated, and a derivation, so to speak, was directed towards the intestinal canal. If it was necessary to act directly on the mucous inflammation, an emulsion prepared from quince-seeds with cherry laurel water fulfilled this indication very well.

Smearing the aphthous surface with rose-honey, or with a solution of borax in marsh-mallow water, was often useful. But perhaps one of the most useful and necessary of all remedies was the application of one or two leeches about the angle of the jaw. Dr. Girelli assures us that he has derived much more benefit from cautious local bleeding, than from almost any other means. In some cases the application of a blister to the nape of the neck was of service.

It is of the highest consequence that the child, if at the breast, should be suckled by a healthy sound nurse, and, if not at the breast, that it should be fed with light nourishing food. One nurse should never suckle more than a single child. To show the importance of this precept, we need only mention that, in the Foundling Hospital at Brescia, the number of patients and the amount of the mortality were always proportionate to the fewness of the nurses.—*Medico-Chirurgical Review*, from *Annali Universali di Medicina*.

25. *On the Distinction between Typhus Fever and Dothiëntenterie*.*—By N. C. BARLOW M. D. (Read before the Parisian Medical Society, February 6, 1840.) All typhoid diseases have a certain assemblage of characters in common: these are great prostration of strength, stupor, dryness of the tongue, sordes on the teeth, somnolency and delirium; to these symptoms M. Andral has given the name "typhoid state." They belong to typhus, properly so called; they may supervene in the course of various acute febrile affections, and they form also a part of the phenomena presented by dothiëntenterie, but they do not constitute its peculiar character, and are merely the general expression, or symbol, under which a great variety of diseases agreeing in these particulars may be classed. Although, therefore, typhus fever and dothiëntenterie both exhibit the above group of symptoms, yet such a coincidence does not in consequence prove them to be the same or even similar, diseases, while from other characters, which they do not exhibit in common, we find that there exists an important and well-marked difference between them. This difference does not consist solely in a lesion of the clustered glands of Peyer, and of the solitary glands of Brunner, which forms the anatomical character of dothiëntenterie, but also in a certain series and succession of abdominal and other symptoms; and, I would add, likewise, in the natural history of the two diseases themselves. The typhoid fever of France is an endemic disease; it is endemic in those localities, as in Paris, where it principally prevails, and where the influence of contagion is extremely doubtful, and by many positively denied. The typhus fever of Great Britain and Ireland, on the contrary, is a highly contagious disease, and particularly so in Edinburgh, Glasgow, Dublin, and other large towns where it chiefly occurs. In London the disease approximates more to the Paris fever, or rather, cases of both kinds are more commonly met with there than in the towns just mentioned, and typhus is there believed to be less contagious. I think it will be found in general at least, that a disease which is endemic is not at the same time contagious, and *vice versa*; that the poison in the former case acts more immediately on the nervous system, and hence the disease which it occasions is sudden, while in the latter the poison is absorbed into the blood, and hence the development of disease is more gradual; and I would suggest that two diseases, so different in their modes of origin, however nearly in the course of their symptoms they may come

* Dr. Barlow employs this term to designate the "typhoid fever" of French writers.

to resemble each other, cannot be essentially identical. * * Dothiënenterie chiefly attacks those who have only been a short time resident in Paris, or in a large city; typhus fever observes no such distinction of persons; the former rarely occurs above the age of 40, or below that of ten, the latter, on the contrary, very frequently does.*

Dothiënenterie is at its maximum in autumn, and at its minimum in winter. Autumn is the season in which abdominal affections and endemic fevers are most apt to prevail, and between a slight abdominal derangement and a confirmed dothiënenterie there appears to be a natural connection, and frequently a very obvious transition: in typhus no such connection is observed to exist, and the disease is often at its greatest height in winter, when the former is comparatively rare. The most marked endemic diseases are fevers characterised by a sudden accession of severe rigors, succeeded, sooner or later, by much increased heat of surface, and followed by diaphoresis, the symptoms observing, with more or less regularity, a certain periodical return, and having for their accompanying anatomical lesion an enlargement of the spleen, often very considerable. These fevers, under some circumstances, may become continued, the typhoid state may supervene, and various complications ensue. I will not say that dothiënenterie is allied to these diseases, but it cannot be denied that it has something in common with them; it is endemic; it prevails mostly in the autumn, usually beginning a short time before noon, with shiverings, repeated frequently during the day, and especially at night; to these succeeds considerable heat of surface, followed by diaphoresis, which is frequent in the early period of the disease, and also during convalescence, at which time the heat of the sun subsides. Sudamina often occur; and one of the most common anatomical lesions is an enlargement of the spleen, which may occasionally be felt during life, surpassing the margin of the ribs, and after death is discovered, in some cases, to be four or five times its natural size. There is here, if not a sufficient resemblance, at least a sufficient analogy, to induce us to think, that the endemic poison of dothiënenterie may belong to that class of poisons which acts directly on the nervous system, and which, whatever their mysterious nature may be, are certainly very different from those morbid agents which are generated in the living human body.

It may also be remarked that the mesenteric fevers of Rome, described by Baglivi, though continuous, are allied to the remittent type; that the morbus mucosus of Röderer and Wagler, which occurred at Göttingen in 1761, and which agrees with the third form of typhoid fever, specified by M. Chomel, made a near approach to the character of the hemithitæus, or semitercian remittent, and that it was preceded and followed by agues, and assumed, during its course, an intermittent character. The bilious pituitous fever of Schröder, also, showed occasionally a remittent form; and the gastric fever occurring at Vienna generally betrays the same character. In some parts of Germany, on the contrary, the symptoms which this fever presents have caused it to be referred to the head of typhus, under the name of abdominal intestinal typhus,† the name given by the Germans to what the French call dothiënenterie, or “la fièvre typhoïde,” and which, in Great Britain and Ireland, is so frequently confounded with typhus fever, properly so called, though it appears that some doubt may be entertained with regard to its genuine type.

In typhus fever there is most usually a premonitory period, marked by headache and general indisposition; dothiënenterie, on the contrary, is rarely preceded by precursory symptoms; its occasion is mostly sudden, and it comes on at once with a rigor. Even in those cases where precursory symptoms do occur, such as languor, loss of appetite, and diarrhæa, these do not prevent the charac-

* These and other general statements were illustrated and confirmed by references to the works of Louis, Chomel, Littré, and others, and by a careful comparison of the reports of various hospitals in Great Britain and Ireland, and the observations of British medical men.

† See Dr. Craigie's “*Præctice of Physic*,” vol. i.

teristic invasion: almost always there is a particular moment when the disease manifests itself; it is not established in a slow and progressive manner; the patient does not fall ill by degrees, but is seized all at once, so that it is probable that the precursory symptoms ought not to be considered as essentially connected with the disease itself.

The general symptoms of dothiënenterie have much in common with those of typhus, but there is a smaller group of symptoms, which are more or less distinctive of the disease, accordingly as they occur in conjunction, and are more or less perfectly developed, these are diarrhœa, epistaxis, pain or uneasiness on pressure being made over the right iliac region, gargouillement, and meteorism; the order and period of the accession of symptoms assist, at the same time, the diagnosis. The peculiar typhoid eruption is also an important particular; and some other minor circumstances, as singing or buzzing in the ears, deafness, dizziness, and giddiness, have likewise been mentioned; but the abdominal symptoms, together with the epistaxis and the typhoid eruption, are the characters on which most reliance is to be placed.

Diarrhœa is one of the earliest and most constant symptoms. It usually sets in at the beginning of the disease, and continues till its close. It does not appear to be essential, as three fatal cases are mentioned by M. Louis in which it did not occur, neither is there any obvious relation between its amount and the degree of organic lesion which exists; yet its occurrence is almost invariable. In typhus an opposite state prevails, and diarrhœa is comparatively rare. In dothiënenterie there is sometimes intestinal hæmorrhage, more or less abundant. Epistaxis is a very characteristic symptom, and may occur either in a few drops only, or in sufficient quantity to augment considerably the danger of the patient. It usually appears in the course of the first week. Towards the close of this period meteorism most frequently manifests itself; its commencement is ascertained by a clear sound being produced on percussion; while at the same time, on making pressure, especially over the right iliac region, a gargouillement is heard, occasioned by the co-existence in the intestines of liquid and gas.

The typhoid symptoms of dothiënenterie present nothing very important to the present subject. There is at the commencement great prostration of strength, but probably not more than is seen in typhus; there is also much dizziness and somnolency, but the patient obtains little or no sleep; as the disease advances somnolency is succeeded by delirium. Deafness is not an unusual symptom, and is frequently preceded by a sound of buzzing in the ears. The sense of vision is in some cases obscure, and objects appear to the patient as if enveloped in a cloud.

The tongue may present almost every variety of appearance; but if any indication is furnished by that organ, it may be that it is less frequently dry and black than in typhus. Neither can any inference be drawn from the pulse, unless it be, that at about the 8th or 9th day, from having been somewhat full and firm, it may become small, thready, sometimes trembling, and even intermittent.

Towards this period the typhoid eruption, consisting of lenticular rose-coloured spots, "*taches roses*," appears on the abdomen, back, and chest; it is not an abundant eruption, and not always present. The spots are about a line in diameter, regular in form, slightly elevated, and disappear on pressure, but return again. They come out in succession, four days being the average duration of each, and eight days that of the disease itself. Sudamina, though less constant, are sufficiently frequent to assist the diagnosis: they consist of small vesicles, filled with a transparent liquid, and give a somewhat rough feeling to the skin. They commonly commence on the sides of the neck, armpits, and groins, and extend, in some instances, to the trunk, and extremities. This eruption comes out later than the former, and rarely disappears before the fifteenth day. Petechiæ have been chiefly noticed in particular epidemics. They vary in diameter from one to several lines, and neither project nor disappear on pressure. Vibrices occasionally occur.

In the typhus fever of Great Britain and Ireland the eruption is chiefly pete-

ohial, often mixed with vibices, appears earlier—on the fourth or fifth day—sometimes before, and is commonly profuse, the amount of the eruption bearing a certain ratio to the intensity and duration of the disease. * * * * Besides the above symptoms dothiënenterie is frequently marked by a headache of a dull, fatiguing kind, usually occurring at the commencement of the disease, and continuing about eight days; occasional dysphagia, and the existence of a sibilant râle, heard mere or less distinctly over the whole chest.

The duration of dothiënenterie may be stated on an average at from twenty to thirty days. In some mild cases convalescence has occurred as early as the fourteenth or fifteenth day; more frequently it takes place about the twenty-first, and in some cases as late as the thirtieth, and even beyond. Death has rarely happened during the first week, more frequently in the second or third, occasionally in the fourth, fifth, or even the sixth. The average duration of typhus in forty-three fatal cases, mentioned by Dr. Reid,* was twelve and a half days; the earliest death took place on the sixth, the latest on the twenty-second day; so that typhus appears to run its course much more rapidly than dothiënenterie.

The rate of mortality in dothiënenterie may, on an average of a great number of cases, be stated at about one in five; that of typhus is about one in ten.

Dothiënenterie does not appear so often among females as among males, the proportion of the former varying from about one-third to one-fourth only of the latter. Typhus fever, on the contrary, occurs as frequently among females as males, and indeed rather more so. This difference probably arises in a great measure from dothiënenterie being an endemic, typhus fever a contagious, disease. But although women seem to be more exposed to the operation of contagion than the opposite sex; yet the ratio of mortality among them is much lower in proportion than the ratio of the number of cases among them is higher. Thus in Dr. Kennedy's Report of the Fever Hospitals in Dublin, during the year 1837, the number of female cases exceeds that of the males by very nearly one-fourth of the latter, while the number of deaths is one-half less. In Dr. Reid's Report of the Fever Cases in the Edinburgh Infirmary, the proportion of females exceeds that of the males by about one-sixth. In Dr. Cowan's Report of the Glasgow Fever Hospital, by scarcely more than one-twelfth, yet, in both these instances the relative mortality of the two sexes is almost precisely the same as that given by Dr. Kennedy, viz., one-half less among the females than among the males.

The pathological characters met with in typhus may be considered rather physiological than anatomical; they do not consist in any obvious alterations of structure, but in a certain condition of the fluids and solids; the blood is found to have lost its natural property of coagulating, and exhibits a liquid or isolated state; there is more or less passive congestion of different organs, and a considerable tendency exists to putrefaction; while in the intestines and in the mesenteric glands there is not only a complete absence of the characteristic lesion of dothiënenterie, but an absence of every kind of lesion whatever, a truly remarkable circumstance, and one, M. Valleix† observes, which gives to typhus fever a place quite apart from all other febrile affections.

The last particular which I would notice, in reference to the two diseases, is that dothiënenterie never occurs more than once in the same individual whereas typhus fever very often does; one attack, instead of affording complete immunity over after, seeming at least in some instances, to predispose to a second, and so on in succession.

The above are the principal remarks which have occurred to me in considering the differences which the symptoms and natural history of dothiënenterie present from the symptoms and natural history of typhus fever. Other remarks might be added, but these I think are sufficient to show that the two diseases cannot be identical. Briefly to recapitulate the list, they are as follows:—A.

* Report on Fever in Edinburgh Infirmary. "Edinburgh Medical and Surgical Journal," No 64.

† Archives Générales de Médecine, vol. iv.

difference in the manner of origin, a difference in the seasons of occurrence, and a difference in the modes of attack; a difference in the series of symptoms; a difference in the external appearances, and a difference in the duration of the diseases; a difference in the ages at which they occur, a difference in the sexes in which they principally prevail, and a difference in the mortality which they respectively occasion. While the great and crowning difference of all is, the existence of a particular anatomical lesion in one, and the absence of any obvious anatomical lesion in the other.

Surely two diseases which differ in all these particulars cannot be identical.

M. Bouillaud, in his work on essential fevers, has cited various examples of adynamic and ataxic forms, in which the digestive tube presented no appreciable lesion; but, as M. Valleix well observes, we must bear in mind that these adynamic and ataxic fevers, are neither more nor less than diseases of different kinds, accompanied by what M. Andral calls the typhoid state. In a more recent work* M. Bouillaud admits only two forms of fever—the gastro-duodenite, or bilious fever, and the entero-mesenteric fever, or dothiénenterie; and since he has adopted this improved classification the latter disease has always been found to present the characteristic lesion of the intestinal follicles.

This circumstance shows the importance of obtaining definite ideas of things, and not being led away by the influence of names; it illustrates, also, the advantage of seeking some more satisfactory and permanent principle, than that which the shifting semblance of superficial symptoms may afford, whereon to establish the identity of a disease.

If pathological anatomy afford such a principle—and who will say that this is not the most secure, if not the only sure, foundation on which a natural and scientific nosology can be based—then, indeed, must dothiénenterie be considered a disease distinguished *per se* from every other malady that flesh is heir to—a disease in which the anatomical character is so invariable, that the few exceptions which ever do occur serve only to confirm the existence of the general fact, and show it is merely something less than universal, a circumstance which the analogy among natural phenomena would have led us to expect.

If, however, the anatomical lesion be sometimes absent in seeming cases of dothiénenterie, it is never present in any other disease. This is the stronghold of dothiénenterism. Here the partisan of this ill-fated, I might almost say ill-treated, disease, may take his stand, in the words of the Venusian bard it may be said to him,

“—— Hic murus aheneus esto;”

and from this impregnable position, as from behind a wall of firmest brass, he may not only defy the feeble efforts of his adversaries to dislodge him, but may most successfully defeat the attacks of those who, in the sweeping declaration, typhus fever, would annihilate the claims of dothiénenterie to be considered a distinct disease.—*Lancet*, Feb. 29, 1840.

26. *Plastic Bronchitis treated by Mercury.*—Dr. CARR has published in our contemporary a valuable paper, on Plastic Bronchitis, or Bronchial Polypi. The concluding observations, short as they are, exhibit its object.

“The facts, I conceive, derivable from the cases now presented to the Profession are, that plastic bronchitis is a disease *sui generis*; that the sputa are essentially distinct from those bodies termed polypi, and which are no more than coagula, freed of the colouring matter of the blood; I allude to those found in the heart; and those sometimes ejected from the bronchi of patients who have had hæmoptysis. With those they have no character in common, except that of shape, being moulded in tubes of a like form; indeed it is unnecessary to dwell upon the differences, for the preparations, as exhibited on the plate, will at once display them. That as far as the two cases, now published, go, they are not indicative of phthisis, and that mercury is a certain remedy for

* Clinique Medical.

cure, are facts the more valuable, because of the concurring testimony afforded by the valuable case of Dr. Corrigan."

Dr. Corrigan's case happens to be more concise than Dr. Cane's, for which, and for no other reason, we cite it. To Dr. Cane is due the merit of the paper.

Case. On the 14th August, 1839, Mr. A. aged 40, called on Dr. Corrigan.

"As he entered my study, his aspect seemed that of a man in the last stage of valvular heart disease: his countenance was sunken and anxious, his lips were bluish, and his respiration so laboured as to be almost painful to look at; each inspiration was accompanied with a wheezing, so loud that, at first, I thought it was produced in the larynx, but his voice was unaltered. He told me that, notwithstanding his apparent distress of breathing, he was at that moment comparatively easy; that at times the distress of breathing became most severe. On several occasions within the last three weeks, he had attacks of suffocation, coming on in the course of the night, lasting so long as half an hour, and as he described them, threatening almost death. Sometimes, for hours, he has been obliged to sit up, with the window open. These fits terminated in expectoration. He has no palpitations; his appetite is good, and his bowels are regular, he attributes his illness to cold, as its commencing cause, caught about twelve months since, when, after exposure on a coach, he got cough; then in the spring, influenza; and within the last three weeks the suffocative attacks. On examining the chest, I found the sounds of the heart quite natural, and the sound on percussion over the chest good; but on applying the stethoscope under the right clavicle, my attention was at once suddenly arrested by the great irregularity of the respiratory murmur. At one moment the respiratory murmur was very loud, and the next instant it was nearly inaudible. The clear wheeze, above noticed, (*râle sibilant*) was immoderately loud and piercing under the right clavicle, but on tracing upwards with the stethoscope, it became less loud as the stethoscope approached the larynx. These singular varieties in the respiration made me suspect the existence of aneurism or tumours, &c., pressing on the larger bronchia, but I sought in vain for any sign of their existence. I then desired him to cough very freely. He coughed, hard and with a bronchitic ringing, for some moments, and after some efforts expectorated four or five bronchial polypi or moulds of lymph of the bronchial tubes. Of these plastic concretions, one was as thick as a small-sized goose-quill and about an inch and a half long; several were much smaller in diameter, but longer, and all were white, opaque, and remarkably tough. The expulsion of these plastic secretions was immediately followed by a very remarkable change in the state of respiration. The respiratory murmur instantly became suddenly loud, and equal in both lungs, and the wheezing ceased, nor could he again, by coughing or by any effort, reproduce it. The nature of the case was now clear: some of the bronchial tubes had taken on this plastic secretion, and as this formed each successive night, it blocked up the bronchial tubes, until, at last, the obstruction in these tubes rose to such a height as to bring on impending suffocation. From this he only got relief by fits of coughing, which dislodged the secretion, and then there was an interval of ease until the secretion began again to be formed.

Dr. Corrigan directed the cessation of the antispasmodics, &c., and ordered him 10 gr. of hyd. c. magnesia three times a-day, with full doses of aqua kal caustici, and desired him to inhale, twice a-day, the steam of water in which eonium leaves were infused. In five days the mouth grew sore, the plastic secretion ceased, and on the 26th inst. the patient was well.—*Med. Chir. Rev.* from *Dublin Journal*, March, 1840.

27. *Abscess between Pharynx and Spine.*—Dr. FLEMING relates two highly interesting cases, and adds many observations, illustrative of the occurrence of acute suppuration in the loose cellular tissue behind the pharynx. We shall take the first case.

Case. It was that of a boy. His age was three years and a half, and in appearance he was healthy. The premonitory symptoms of his attack, at first

mild, after about thirty-six hours, assumed most intense severity, and without unnecessarily particularizing their progress, it may be stated, that the most aggravated form of high inflammatory fever set in, principally engaging the cerebral organs, and requiring the most energetic treatment to combat it. On about the fourth day, convalescence appeared established. But from day to day a peculiar fixed position of the head, and stiffness in the neck, now attracted attention. The head was drawn back. The muscles, at first tense, became completely and permanently rigid, and the movements of the head painful, and remarkably limited. Soreness in the throat was complained of, and also great difficulty in swallowing, at times accompanied with violent spasmodic efforts. There was no cough, and the voice remained perfect. The articulation became remarkable—the words being as if drawled out with pain and difficulty, and at times perfectly unintelligible.

Repeated and careful examination of the fauces and neck could not detect any apparent local cause for those symptoms, which, with varied degrees of intensity, advanced, producing equally alarming constitutional disturbance and debility. The treatment adopted was principally with the view of promoting the absorption of any fluid effused in the cerebrum, and consisted chiefly in the exhibition of mild mercurial alteratives, and the application of counter-irritants to the region of the occiput.

"On about the tenth day, the symptoms had reached their acmé; the child, emaciated and weakened, had no relish for food, and appeared to drink merely to allay thirst, the efforts at swallowing being convulsive and painful. He was now in a perfect state of somnolency, regardless of every thing about him, when accidentally, whilst sitting beside his bed, I perceived that *position* most remarkably influenced the severity of the prominent symptoms. Stupor in the recumbent posture, almost amounting to perfect coma, in the sitting, or even semi-erect, resolved itself into a comparative sensibility. Respiration slow, laboured, and stertorous, or rather roaring. (as described by the attendants on the child,) in the former position, became comparatively tranquil in the latter, and a pulse, in the one, ranging only a beat or so above forty, in the other, assumed a more natural character. Again, fluids were more frequently darted convulsively forwards through the nostrils or mouth, than passed into the stomach, or were ejected, as in the act of vomiting, and the recurrence of the symptoms of cerebral compression took place on returning to the recumbent posture, which for the last three days had been almost the permanent one.

I now considered that this relation of symptoms might still be caused by mechanical obstruction in the pharynx, although repeated examinations on former occasions did not lead me to this conclusion. An additional obstacle presented itself in the fixed position of the jaws, so that it was only by considerable force I could so far separate them as to admit of even getting my little finger between them. On forcing it back, I accidentally, but distinctly, felt a tumefaction beyond the base of the tongue, giving, as well as a compressed finger could indicate, it, a sense of yielding. To get a view of it was utterly impossible. The soft palate and uvula were easily discernible, but the depression of the tongue gave so much pain, and the separation of the jaws was so very limited, that further investigation was totally out of the question. Indeed, in addition, the evidence, even from touch, was necessarily momentary, from the severe paroxysms of dyspnoea attendant on the examination.

Although I had never heard of, nor witnessed a case of the kind before in children, it at once occurred to me, that this might be an abscess at the back of the pharynx, mechanically producing the above symptoms, and having stated this as my opinion to the family, the assistance of Dr. Crampton and Mr. Cusack was immediately procured. After a patient, though extremely unsatisfactory examination, they coincided in opinion with me as to the presence of a tumour in the situation alluded to, and it was determined that I should perforate it with an explorator which I had provided for the purpose, with the view of ascertaining its actual nature—a doubt existing on this head, not alone from the extreme firmness of the tumour communicating a very indistinct sense of

fluctuation, but also on account of its probable anomalous nature from the previous acute and present chronic cephalic symptoms. With every necessary precaution I accomplished this object, though with considerable difficulty, and to my great gratification, witnessed the sudden gushing forth of a large quantity of healthy purulent matter. The whole features of the case were almost instantaneously altered. The somnolency was removed, deglutition was facilitated, and more cheering prospects manifested themselves. Nourishment was freely given throughout the day, and quinine administered in small and repeated doses."

The symptoms were returning in the evening, when Dr. Fleming found, on examination, that the abscess was again filled and the opening closed. He introduced a carefully protected sharp pointed bistoury, into the site of the opening, and freely enlarged it downwards. The relief was instantaneous. He directed the trunk of the child to be elevated as much as possible, and the head depressed. The night was passed comparatively tranquil; the quantity of matter which escaped through the mouth was considerable, largely staining the pillow. The next day, the boy was able to play with his brothers, and subsequently his improvement was progressive, though slow.

The next case is very similar, save that the child was an infant at the breast, the abscess below the level of the tongue, and the fluctuation more obscure. A peculiar instrument, therefore, became necessary. It consisted of a trochar about four inches long, one extremity of the cannula being slightly curved, the other with a ring on its upper surface to receive the fore-finger; into this cannula was passed a jointed stilette, with, at its opposite extremity, a ring for the thumb, and a moveable screw to graduate the projection of its point.

The head of the child being firmly supported, Dr. Fleming passed the fore-finger of the left hand towards the back of the pharynx, there resting the point of it, and guiding the armed trochar with the concealed stilette along it, accurately fixed it on the tumour, pressed forwards the stilette to its limited mark.

Dr. Fleming has not seen any similar acute case in the adult. But some have been related—one by Sir Astley Cooper—one in the *Dictionnaire de Medecine et de Chirurgie Pratique*, under the head "*Pharyngotomie et Pharyngotomie*."* In all these cases, the abscess was formed before it was suspected.

Dr. Fleming makes some lengthened observations on these cases, but, though instructive, we can not go into them. We think the one case we have quoted, together with the following summary of his opinions, will enable our readers to see their bearing in a sufficient degree.

"I consider this affection of the throat in children, when *acute* in its progress, as, often, an inflammation of a lymphatic gland, situated at the back of the pharynx; an inflammation extremely rapid in its progress to suppuration from its particular position; that I would watch for it during the period of difficult dentition, and in the several cutaneous affections or diseases of the gastro-intestinal mucous membranes to which children are liable; and that I would consider as strongly pathognomic of its presence the following symptoms:—

Fever, more or less æthenic in its character according to the peculiarity of constitution of the child, is always present, and, I think, precedes the development of the local symptoms.

These local symptoms are premonitory and essential.

The *premonitory*, indicative of local uneasiness, but yet common to all affections of the throat; complained of, or otherwise, according to the age of the child, and on examination, not accompanied with proportionate visible lesion. The *essential*, often very suddenly supervening, and indicated by derangement of the cerebral, circulating, and respiratory systems, alternating with the comparatively healthy condition of those systems, according to the alteration in the position of the individual.—Fixed and retracted state of the head, with rigidity of the muscles at the back of the neck, and more or less looked state of the

* [A case is recorded in Porter's work on the Surgical Pathology of the Larynx and Trachea. (See *Philad. Journ. Med. and Phys. Sc.*, Vol. xiv. p. 371.) See also this Journal, Vol. vii. p. 260. *Erron.*]

jaws.—Painful deglutition, impossibility of swallowing solids, and fluids convulsively darted forward through the mouth and nose.—Repeated acts of deglutition without the presence of any fluid in the mouth, and, on examination of the fauces, a firm, projecting tumour felt beyond the base of the tongue, and if seen, presenting a smooth, rounded, highly vascular appearance behind the soft palate usually occupying the median line, but occasionally inclining to either side. These *essential* symptoms accompanied with the ordinary characteristics of suppurative fever.

When such symptoms are present, an abscess should be looked for, and an opening (if there are any indications) should be cautiously made.—*Med. Chir. Rev.* from *Dublin Journal*, March, 1840.

27. *Neuralgic Pains of the Abdomen after parturition simulating puerperal peritonitis.*—Dr. GOLDING BIRD communicated to the Westminster Medical Society, at their meeting April 11th, 1840, the result of his observations on the nature and treatment of those severe neuralgic pains of the abdomen occurring after parturition, in women of nervous temperament, and the subjects of uterine irritation. These pains, from their severity, and from their being ushered in by rigors, followed by heat and sweating, were very likely to be, and often have been, mistaken for peritonitis—an error of immense importance, as the depleting and depressing measures generally required in the treatment of the latter diseases were almost always injurious and even dangerous to patients labouring under the particular form of neuralgia in question. As a brief outline of the symptoms presented in these cases, it may be observed, that a woman previously the subject of uterine irritation, as shown by painful menstruation, leucorrhœa, or wandering pains in the hips, loins, and back, becomes pregnant, and passes through the period of utero-gestation tolerably well; labour ensues, and all does well for a space of time, varying from a few hours to two or three weeks, when from the slightest exciting cause, as, a few hours' constipation, the ingestion of some injurious article of diet, an arrest of any one of the secretions, but especially of the cutaneous transpiration, or a direct stimulus applied to the generative organs a peculiar train of symptoms sets in, preceded by severe rigors, heat, and sweating, and consisting of intense pain over the abdomen, but especially about the uterine region, coming on in paroxysms every ten or fifteen minutes, or sometimes at longer intervals, causing the patient to scream out, and writhe in agony like a person in a fit of colic; excessive neuralgic tenderness of the whole abdomen being present in the absence of the paroxysms of pain. Slight delirium and intense depression of spirits mark these attacks; the lochia cease on their onset; the pulse is generally very rapid, but small, yet jerking like an hæmorrhagic pulse; the tongue variably, according to the state of the intestinal tube; the skin generally soft and moist; sometimes, although rarely, warm and dry.

The diagnosis of this disease from peritonitis is not very difficult, if attention be paid to the character of the symptoms. The occurrence of the pain in paroxysms, the inability to retain a fixed position in bed, the capability of supporting pressure on the abdomen when the patient's attention is arrested by an abrupt question, or her infant's cries, will generally serve to distinguish this neuralgic affection from peritonitis. With regard to bleeding these patients in an upright position, to distinguish between neuralgia and peritonitis, Dr. Bird expressed his dissent from its approved value, as he had seen many instances in which patients labouring under uterine neuralgia had borne the loss of immense quantities of blood not only without fainting, but without immediate appearances of depression, although, in a few hours afterwards, the alarming state of depression which appeared, sufficiently indicated the injurious influences of the bleeding.

The treatment of these cases depends greatly upon circumstances; in general, supporting the patient by a bland and nutritious diet, application of very hot fomentations to the abdomen, the restoring whatever secretion appeared most deficient, and allaying the irritable state of the patient by sedatives, con-

stituted the most important modes of treatment. Dr. Bird alluded to the great prevalence of this class of affections in certain districts, at particular times; during the last six months a large proportion of women, in the district of the Finsbury Dispensary, who were confined, became the subject of puerperal neuralgia of the abdomen, in a more or less severe form. This he did not attribute to any epidemic influence, but rather to a moral effect, produced by the prevalence of child-bed fever in the district, as in almost all the cases admitted under Dr. Bird's care at the Dispensary, some depressing effect produced by such an impression was very easily made out.—*Lancet*, April 25, 1840.

29. *On the Morbid Consequences of Undue Lactation.* By SAMUEL ASHWELL, M. D.—Undue lactation, as a matter of medical inquiry, has not, I think, received a fair share of attention. Its injurious consequences are so frequently overlooked, or, being misunderstood, are attributed to other causes, that it will not, I trust, be regarded as unprofitable to comprise, in a few short and simple observations, the history and treatment of this affection, in its mild, severe, and complicated forms. The subject is practical, and therefore interesting; and, avoiding controversial views, no opinions will be advanced which are not supported by the cases which are constantly occurring.

The reader may be surprised to learn, that little has been written on undue lactation;—Dr. Marshall Hall, so far as I know, being the only author who has bestowed upon it more than a few incidental remarks. The essay of this able physician is a valuable contribution to our knowledge of the disease; although even Dr. Hall has scarcely done more than allude to the severer functional derangements, and the still more dangerous lesions of the brain and lungs.

I may, without hesitation, thus early observe, that *exhaustion*—generally attended by symptoms of reaction, but occasionally by depression, so extreme as almost to conceal any such effort—constitutes the prominent, the essential feature when lactation has become a disease. Anæmia, with irritability and universal pallor, are as apparent as in chlorosis: of course, in different degrees. In some instances there is distressing debility: in other, and less serious cases, there is only trifling anæmia, and proportionately slight pallor. Local congestion, also, as it is the result of an irregular distribution of the blood, may partially modify the anæmia and pallor, by producing, in certain organs, a temporary but morbid energy, and, by fullness of the capillaries, a less pallid and unhealthy aspect of the surface. Still, exhaustion is the permanent morbid state, associated with undue suckling.

Were the morbid consequences of this disease invariably functional and slight, even then, as occurring frequently, it would deserve attention: but, when it is remembered, that not only severe and complicated functional affections, but occasionally lesions even of an organic and incurable kind, may be fairly traced to its influence, when misunderstood or imperfectly treated, it certainly deserves especial attention. It may, I think, be proved,

First, That lactation to be morbid need not be long: evil consequences may ensue soon after its commencement; occasionally, within a few weeks; more frequently within a period protracted beyond nine months.

Secondly, That organic lesions may, although very rarely, result from undue suckling.

And, Thirdly, That weaning the child is generally indispensable to the cure—the remedy, without which all others will be inefficient?

It will be unnecessary to dwell at all largely on the history and symptoms of undue lactation: a few remarks will suffice to place the subject in a clear light. The period of suckling is happily, in the majority of women, one of health and enjoyment: still, the exceptions to this rule are by no means few; nor can it be expected, in an artificial and increasingly luxurious state of society, that the number shall be diminished. Thus, we do not find that robust and plethoric women often suffer from over nursing. If occasionally this is the case, the lactation has probably been protracted to fifteen, eighteen, or twenty months, or even to a longer term; and it certainly cannot then be a matter of surprise, if,

as the consequence of such imprudence, irritability, exhaustion, and various painful affections, shall occur. Women, originally of susceptible, weakly, and especially of strumous constitutions, whose minds have early and long been cultivated at the expense of their physical strength, who live in confined and unhealthy places, who before marriage have suffered from chlorosis, and who have since been weakened by hæmorrhagic and leucorrhæal discharges, or indeed by any undue secretion, are most frequently the sufferers from undue lactation. Such mothers can scarcely nurse at all; and others, somewhat stronger, having begun lactation favourably—by a poor and restricted diet; by nursing entirely, without the aid of feeding the child artificially; by broken rest, by anxiety; and by other circumstances too numerous to detail—quickly become exhausted, and present the whole series of symptoms constituting the malady of over-lactation.

Occasionally, in a few weeks—commonly in a few months—it will be apparent, from the imperfect nourishment of the infant, and from the debility, anæmia, and pallor of the mother, that the injurious consequences of over-nursing have commenced. Amongst the earlier symptoms of failure are, a heavy, dragging sensation in the back and loins, and directly between the scapulae, when the child is at the breast; and a feeling of peculiar sinking and emptiness at the pit of the stomach, and over the whole abdomen, for hours afterwards. Inquire particularly, and you will discover, what is often anxiously concealed, that the milk is scanty in quantity, and with difficulty secreted; and that without long intervals, scarcely any fresh supply would be furnished. At this point, much might be done. If weaning entirely were practised, the symptoms would soon disappear; or if only partially adopted (by the child being judiciously fed, and the mother's rest at night secured, instead of being continually broken), lactation might be safely continued; as the appetite, digestive powers, and strength of the parent would be thereby improved. But the attempt to nurse is often persevered in, without these advantages; and the morbid results are soon aggravated. Together with an excitement or depression of mind, there is a proneness to hysteria; the pulse is quicker than natural, and easily compressed; the muscular system is weakened; the appetite is nearly destroyed, or it is at least fastidious and unhealthy; the bowels are either constipated and flatulent, or painfully griped, and slightly purged; there is headache, or giddiness, with impaired vision; pain between the shoulders, or in the sides, below the cartilages of the false ribs: now, but especially if the suckling be continued, there is swelling of the ankles, oedema of the face, and frequent palpitation. Such are the symptoms commonly attendant, even on a recent case; and it is only requisite that their intensity should be increased, and they will then correctly portray a severe and protracted example of undue lactation. Nor is it at all improbable that one or several of these symptoms shall exist in marked prominence, so as to excite the peculiar apprehension of the patient, and the almost exclusive attention of the practitioner. Impaired appetite is an especial attendant on the malady: nor is palpitation much less common. A chlorotic aspect, and slight emaciation, often give the first alarm; and dimness of vision, exciting fears of amaurosis, never fails to induce anxiety. The contrast of such a case, with one of favourable suckling, where health, cheerfulness, and vigour are enjoyed for many months, must fix the attention of the practitioner on the disease.

Let it be remembered, that the morbid process now sketched is entirely functional: at least, there is no symptom in the series which may not have a functional origin, and be confined within the limits of functional disease.

Before leaving this part of the subject, it will be proper to allude to some of the complications of morbid lactation; giving the priority to profuse menstruation, menorrhagia, and leucorrhœa. That the *function of the uterus* should be sooner or later disturbed by the continuance of a disease originating in an organ intimately connected with its own economy, might, from analogy, be easily inferred; more especially when the malady had deranged the whole system, on the health and activity of which the uterus is so greatly dependent. Thus, after the evils of over-lactation, already described, are fully realised, the uterine mucous lining, as well as its muscular tissue, partake of the general debility, and not only is

there profuse menstruation, but, from the relaxation of its capillaries, permits the escape of large quantities of blood: add to these losses, the almost constant drain of a leucorrhœal discharge, and it will then be understood, that over-lactation, thus complicated, may seriously and alarmingly exhaust a delicate and irritable female. How far such a condition may prepare the way for organic change of the womb, is not easily determined. I confess, I am disposed to think it favours abrasion, ulceration, and vivacious growths.

Functional Amaurosis, accompanied by congestion of the conjunctiva, is a frequent result of excessive lactation; and seldom fails, from its interference with the sight, at once to arouse the patient's fears lest vision should be entirely and permanently lost. These apprehensions may with truth be allayed; as doubtless, in the greater number of cases, prompt weaning will alone remove the affection: still, it may be necessary repeatedly to apply small blisters near the eye, and absolutely to forbid its employment. Improved diet, country and sea air, exercise out of doors, iron and quinine, are important remedial auxiliaries. Nor is it unimportant that quickly-recurring pregnancy should, if possible, be avoided. I have known several instances where, during a pregnancy immediately succeeding the exhaustion of over-nursing, the eye has been almost constantly in a state of "blood shot" or congestion, and the sight excessively imperfect. Months, and even years, sometimes elapse, where able treatment has done its best before distinct and strong vision is re-acquired. Specks, and slight ulcerations of the cornea, are occasionally connected with the exhaustion and irritability of nursing. In all these cases, provided there be no serious organic change, the sufferer may be encouraged certainly to expect the restoration of this most invaluable faculty.

Several examples of *fascitation* have fallen under my notice. In one poor woman, an out-patient of Guy's Hospital, the seizures always occurred after she had nursed for three or four months; and they were so violent, that she was compelled to lay down her baby when they occurred, lest she should let it fall. In another young and hysterical patient, who had borne children very quickly, there was, during lactation, an almost continual and slight twitching pretty universally throughout the extremities, but especially of the face. In both, weaning was always necessary before the sixth month, more on account of leucorrhœa and general irritability, than for the fascitation.

Epilepsy has been noticed by authors as the product of over-suckling; on the same ground as inanition, losses of blood, and deficiencies in its quantity and quality, are known pathologically to be productive of this malady; and I could adduce several instances where fits, difficult to be distinguished from decisive and unquestionable epilepsy, have occurred.

Insanity, more or less permanent, may originate from over-lactation; commencing by peculiarity of sentiment or temper, and plainly evinced by pertinacious adherence to an opinion once formed, however erroneous; and scarcely at all more strikingly displayed than in a determined opposition to any advice having for its end an entire or even a partial weaning. In this early stage, the further advance or the protracted continuance of the malady might probably be thus prevented: but, instead of weaning, larger quantities of porter or wine, with animal food, are most improperly resorted to. Still the desired supply is not obtained. The stomach has been already weakened; and as it is scarcely able to bear a diminished diet, fever and indigestion, or only apparent and temporary, not real strength, must be the consequence of this increased supply. Together with a continued sparing secretion of milk, the symptoms already described are aggravated. The insanity becomes positive and acute, the pulse quick and sharp, the skin parched, and the whole system deranged. The conduct of the patient is no longer doubtful: her actions are often violent; and, without personal restraint, serious, perhaps fatal injury might be inflicted on herself, and those around her. I agree, however, with Dr. Locock, that the aberration of undue suckling is rarely of this serious kind, excepting where generous diet and wine are injudiciously administered: more commonly it shows itself in weakness and absurd ideas, in whim and caprice. If weaning and

careful treatment be even now adopted, the symptoms often subside easily and quickly: while in other cases, where probably a disposition to insanity exists hereditarily, the disease is of longer duration, requiring seclusion and confinement for its cure. If it be asked whether permanent insanity is ever the result of the aberration of undue suckling, I confess that I am unable fully and satisfactorily to answer the question. In my own practice, such has never been its consequence; nor, so far as I know, have I discovered an example of the kind. The exhaustion of over-nursing induced the re-action and irritability on which the malady depends: and as this is gradually removed, by the formation of a larger quantity of better blood, the insanity passes away, and the individual slowly and anxiously recovers her lost reason. It may perhaps be said, by those who regard this malady less seriously, that the insanity would have occurred, independently of its intervention. The appended cases negative such an opinion. Additional confirmation is also furnished by the result of protracted lactation after another confinement. If, after such an event, more especially if the interval between the deliveries has been short, the suckling be again protracted, a similar aberration will probably ensue, indicating the propriety of greatly curtailing the time of lactation, if not of entirely giving it up.

It is not difficult to show many points of resemblance between this form of insanity and puerperal mania. The latter most commonly occurs in women of weakly, hysterical, and irritable habits; and, in the same class, over lactation is most frequently witnessed. In the greater number of examples of puerperal insanity, a modified antiphlogistic treatment only, comprising small local bleedings, cordial aperients, and particularly sedatives, with mild nourishment and tonics, is most successful; and the same may be said of the insanity from over lactation. Puerperal aberration is rarely permanent, if insanity be not hereditary, and if improper treatment has been avoided. The same observations are true of the insanity of over lactation. The former is disposed to recur in after confinements; and the latter will show itself afresh, after successive and injudiciously protracted nursings. There is, however, a marked difference in the frequency of the two diseases. The shock of parturition, the suddenness of the transition from pregnancy to the puerperal state, and the establishment of lactation itself, all of which involve considerable changes in the circulation and in the nervous system, sufficiently account for the greater prevalence of the one malady over the other.

The *pathology* of these functional results of undue suckling is by no means intricate or unsatisfactory. An impaired and attenuated condition of the blood, and a consequently depressed state of the nervous system, especially of the organic system of nerves, is the clue by which all the symptoms may be unravelled.

I pass on now to notice what I believe to be a fact; viz. that very prolonged undue suckling may, *although rarely, induce organic change in the brain, lungs, and uterus.*

It has already been remarked, that *headache* is a frequent concomitant of the malady; nor can the practitioner be too strongly impressed with the hazard arising from its constancy. So long as it is general, not very severe and transient—so long as it does not recur periodically, with marked premonitory symptoms—it may be viewed as comparatively free from risk. But if it be dreaded, on account of the permanent uneasiness which it has already produced, or from its intensity and acuteness; if it seize on one part of the head, and remain fixed there; if its paroxysm be preceded by rigors, and if the pain never entirely subsides; more especially, if there be partial paralysis, mental peculiarity, or forgetfulness approaching to imbecility; or any other anomalous symptom indicative of deranged nervous action, for instance, an unusual affection of the eye, such as double or impaired vision; or of the auditory nerve, injuring the hearing, or rendering it excessively and painfully acute; or if there be impeded deglutition; then danger exists, and a softened, or otherwise structurally altered condition of the brain, may be feared. Still, if weaning has not been adopted, it ought yet to be urgently enjoined.

Again, the lungs may become organically affected; or, to express what is probably more strictly accordant with the fact, a tendency to phthisis, hitherto latent, may be developed; tubercles, till this period quiet and inactive, may soften, and all the symptoms of consumption may supervene. A slight and occasional cough need not excite apprehension; but if it be short, hacking, and habitual; if the breathing be quick, and disturbed on slight occasions; if there be fixed pain in the side, or over any part of the thoracic region; and if, added to these symptoms, there be progressive emaciation, even doubtful sputa, morning perspiration, and a constantly quick pulse, it may be confidently assumed, that if serious mischief has not already occurred, it is at hand. The stethoscope will scarcely fail to reveal some important structural lesion.

The uterus may, I think, undergo *organic change*, as the result of undue suckling.

The pathology of these structural lesions need not occupy us long. In reference to the lung, there can exist no doubt that the circumstances of undue lactation are favourable to the development of phthisis; and I believe, that if the supply of milk in women of this class did not generally very soon cease, many more would fall victims to protracted nursing.

As to the brain and uterus, we are so much more accustomed to see their organic changes following a state of hyperæmia and repeated irritation and inflammation, that we are indisposed to recognise such consequences from a state where exhaustion is the prominent feature; and yet this is physiologically correct. It is universally admitted, that the blood nourishes the solid structures of the body; and without its healthful influence their integrity cannot be maintained. If then, by an undue and protracted lacteal secretion, the quality as well as the quantity of the blood is impaired, it seems an inevitable result, that a morbid modification of the firm and solid organs of the body must ensue. Just in proportion as the fibrin and albumen of the blood are drawn off, must the structures alluded to suffer in their organization. And, as induration results from inflammation, where there is generally, at least very often, an undue proportion of fibrin, so may softening of the brain and uterus, without malignancy, follow in the course of undue suckling, independently of any inflammatory action. Andral supports this opinion. He says: "Where shall we find the symptoms of encephalitis, carditis, hepatitis, nephritis, metritis, &c., in various cases of softening of the brain (especially of its white central portion), and of the heart, liver, kidneys, uterus, &c.; every one of which may pass into such a state of softening, that its tissue may be torn or broken down into a pulsatious mass, without having given rise to a single symptom which could lead to a suspicion of the existence of inflammation."

Treatment.—The indications in the merely functional affections are not difficult to meet. Where the symptoms of exhaustion are slight, a better diet, a careful regulation of the bowels, a tonic treatment, and, above all, diminished suckling, will often avail. Nor is it necessary to urge very strongly, because their propriety is evident, that the child should be fed two or three times within the twenty-four hours, and that unbroken sleep during the night should be secured to the mother. But let it be remembered, that this will not always avail. A continuance of the debility, or the aggravated prevalence of one or more of the symptoms already enumerated, will plainly indicate the necessity of entire weaning. If the child be purged, or become gradually emaciated, it will corroborate the importance of the step.

Where organic disease is threatened, especial attention must be paid to the organ in which it seems likely to occur. Cupping, or leeches, may be required; and counter irritation, by blisters, setons, or issues, may be expedient: beyond these general directions, the practitioner will proceed according to the exigencies of the case, never omitting the weaning of the child. The convalescence of such patients is generally protracted and difficult, years sometimes elapsing prior to recovery. Nor can it be too forcibly recommended, that suckling should be abandoned, if a fresh pregnancy succeed very quickly. The symptoms are often rendered worse by gestation, and invariably by a renewed lactation. Iron, cha-

lybeate waters, country and sea air, travelling, and exercise, are most important auxiliaries.—It would be easy to enlarge the details of this portion of the essay, but I cannot think it requisite to do so. Every case will demand a curative or preventive treatment; and it will be fortunate for the patient if the approach of organic symptoms be desisted sufficiently early to obviate their full establishment.—*Guy's Hospital Reports*, April, 1840.

30. *Acetate of Lead in Bronchitis*.—Dr. William Henderson in a paper in the *London Medical Gazette* (May 8th, 1840) states that after a careful investigation of the powers of the acetate of lead, continued for several years, and based on an ample compass both of personal observation and the reported experience of several practitioners to whom he has recommended the use of it, he feels warranted in stating his conviction that it is a remedy by far the most worthy of reliance in bronchitis attended with profuse secretion. The useful agency of this preparation, he says, “is not confined to the bronchitis of measles and whooping-cough, but is equally observable in the simple bronchitis, and in that which so often occurs as a complication of continued fever. In whatever class of cases I have prescribed it, its administration has been limited to that period of the bronchitis in which the evidences of abundant secretion were apparent; and those evidences have formed the only guides which I have found it requisite to follow in the first exhibition of the remedy, and in regulating the bulk and frequency of the doses. The stage or duration of the disease does not require to be regarded in prescribing the acetate; and though it exerts a signal and most salutary influence on the secretion of chronic mucous catarrhs, it has always appeared to me that its chief value consists in the rapidity of its operation in such acute cases as are characterised by copious secretion, whether of the mucopurulent appearance or not, whereby the respiration is impeded, and suffocation is threatened.

“In acute bronchitis, diverse effects have been observed to succeed the use of the lead. In some instances a very speedy and entire removal of the rattles has ensued, without the pulse having been lessened in frequency, or the respiratory acts materially altered from their previous condition. In such I have been accustomed to omit the lead, and to recur to the antimony, ipecacuan, and calomel, or to whatever remedy had been previously used. In a second class of cases, the rattles have merely undergone a considerable diminution, while the other symptoms have continued nearly or altogether as before. In those I have found it of great advantage to alternate, with the exhibition of the acetate of lead, either the antimony or calomel and ipecacuan. In a third class no material change of any kind has followed the use of the lead for several days. The cases of this class, for the most part, consisted of whooping cough, with intense general bronchitis; and in the treatment of them, the acetate has been given in much larger quantity, and continued longer than in the others. I have repeatedly ascertained, in cases of this kind, that though the number of rattles, and the apparent amount of the secretion, seemed but little reduced from the state which they had presented on the lead being first administered, a marked change for the worse has followed the omission of it. In this class of cases, the doses of lead have been usually alternated with those of some common remedy; yet the latter have been frequently omitted, unless some indication of pneumonia existed, without apparent disadvantage. In a fourth class, composed mostly of cases, in which the secretion appeared, from its extreme abundance, to be the principal cause of the more harassing symptoms—to wit, the hurried acts of respiration, dyspnoea, and consequent restlessness, &c.—the decrease in the number of the rattles, more especially the larger mucous rattles, which has commonly soon followed the administration of the lead, has been very generally accompanied by a commensurate decrease in the other important symptoms. In not a few instances of feeble children, labouring under acute general bronchitis with copious secretion, have the effects of the acetate been observed, by myself and others, so promptly and decidedly manifested as to excite no little surprise, and to alter the prognosis speedily, from a very gloomy to a very cheerful aspect.

“The dose in which this medicine may be given must vary with the exigencies

of the case and the age of the patient; though the latter particular is of less importance. Indeed I have hitherto found occasion to give it in much larger quantity to children than to adults, owing to the much greater frequency and severity of acute bronchitis in the former. The quantity taken in twenty-four hours by an adult has not exceeded twelve grains, in doses of from one to three grains. The cases of acute bronchitis in the adult in which I have used the lead, have been mostly complications of continued fever. Along with the lead there were usually given a few grains of the compound powder of ipecacuan; sometimes with the addition of the powdered squill. The common doses to children have been, according to the severity of the case, a quarter, half, or whole grain, from eight to ten times a day. In one very severe, and at one time almost hopeless case, so much as four scruples were swallowed within ten days. The child was six years old, and the disease intense general bronchitis, supervening on whooping-cough. No such bad effects succeeded as are too commonly dreaded from the medicinal use of the acetate of lead, though the gums corresponding to the lower incisors exhibited the blue tint pointed out by Dr. Burton, on the fifteenth day from the commencement of the use of the lead, and it is probable that it existed previously to that date, though unobserved. Nor have I hitherto witnessed in any case the dreaded effects of the lead, not even to the extent of causing constipation.

In the chronic mucous and muco-purulent bronchitis, there is no remedy, I firmly believe, (and I have tried a great many,) that possesses nearly the controlling power over the quantity of the secretion, which is displayed by the acetate of lead. I usually give it in a pill containing one or two grains, along with some extract of hyoscyamus and a grain of squill, three or four times a day.

31. *Clinical Researches on Typhoid Fever in Children.*—The *Journal des Connaissances Médico-Chirurgicales* (Nos. for Nov. and Dec. 1839, and Jan. 1840.) contains an interesting article by Dr. C. TAUPIN of which the above is the title. Typhoid fever has generally been considered to be almost peculiar to middle aged persons, and to be as rare in infancy as in old age. This Dr. Taupin asserts to be a mistake, and he gives the following table of 121 cases showing the ages at which he has met with the disease:

Age	No. of Cases.	Age	No. of Cases.
2 years	1	9 years	10
3 " "	3	10 " "	5
4 " "	7	11 " "	10
5 " "	3	12 " "	13
6 " "	9	13 " "	10
7 " "	10	14 " "	29
8 " "	5	15 " "	6

Dr. T. has never met with a case in a child under two years of age, but he states that M. Littré saw it in a child of 22 months.

Dr. T. thinks that his researches which he has detailed in his memoir justify the following conclusions.

1st. That typhoid fever is of frequent occurrence in children.

2d. That the Anatomical lesions which characterise it in the adult, are equally constant in infancy, but that the ulceration of the plates of Peyer occur later and cicatrization earlier.

3d. That the symptoms are the same, but there is greater difficulty in recognizing them.

4th. That the eschars are rare in children.

5th. That the duration of the disease is the same at all ages.

6th. That the affection may be mild or severe; and may present the cerebral, pectoral and abdominal forms.

7th. That it can be confounded only with meningitis.

8th. That it is less severe in children than in the adult.

9th. That the purgative treatment is usually the best.

OPHTHALMOLOGY.

32. *Complete Absence of the Iris.* By Dr. F. FRAEL.—A blond country girl, *stat.* 27, who was in good health, but had menstruated very late, and was of small stature, had had weak vision from her childhood, was near-sighted, and when an infant had often had a reddish glimmering in her eyes. On examination, the eyes were at once remarkable for the narrow and deep apertures of the eye-lids, and for the peculiar, though not vacant expression, which the raven black appearance behind the cornea gave them. The upper eye lid was extended transversely across the upper half of the cornea; it moved sluggishly, and the author never observed it to be drawn up. The eye, though defended by thick set and very delicate eyebrows, was yet very sensitive to common day-light; its ball continually moved hither and thither; its axis was directed downwards, and the ciliary border of the upper eye-lid was constantly vibrating, though the lid itself hang down inactive and broad. The patient had never suffered from any inflammatory or painful affection of the organ, though, to avoid the light, she kept her head constantly turned downwards. The bulb had its natural size, though a somewhat elliptical form. The snow-white sclerotics contrasted strongly with the deep black colour of the interior of the eye. In neither eye was there the least trace of iris; the lenses were of a dull greyish white colour, and atrophied, and they oscillated on every motion of the steady eye-ball. On looking at a near object, they sank deeper down; but in viewing a distant one, they rose up, and formed an inclined plane. In the right eye especially, the cataract sank so deep, that it sometimes lay quite below the inferior margin of the cornea. With proper spectacles the patient could discern a large print; and in looking at it, the cataracts became fixed in their deeply sunk position. Her vision was sufficiently good to enable her to carry on her common occupation, and, therefore, no treatment was adopted to improve it. In another case, reported by the author in Graefe and Walther's journal, there was only a very narrow ring in the place of the iris; but it lay behind the lens which was affected with cataract, and immovably fixed in the anterior chamber, and it therefore seemed to be entirely deficient. In this patient the rudiment of the iris completely obstructed the entry of the light, and there was less sense of sight than in the preceding, though, as the eye was not unsteady, nor covered by the lids, and had its axis in the normal direction, its vision had been quite good till the lens became opaque. In the first of these cases, the author believes that the malformation must have had its origin from an early month of foetal life: in the second, that the arrest of development probably took place in the fourth or fifth month. In both it was remarkable that the defective formation of the iris coincided with a late development of the generative organs.—*London Medical Gazette*, from *Annals of Medicine* Bd. 1; H. 5; P. 501.

33. *Formation of New Eyelids.* By Dr. E. LARORIE.—This paper contains five successful cases of reparation of partially or completely removed eyelids, which have been observed by the author under the care of M. Jobert and M. Blandin.

In the first, of which the subject was a man *stat.* 51, with a malignant tumour of the lower eyelid, M. Jobert removed it all from the external canthus, to within two or three lines of the punctum lachrymale, exposing and removing some of the fibres of the orbicularis muscle. He then cut from the upper part of the cheek a flap of skin of an elongated triangular form, with its base slightly rounded and directed externally, and of which the truncated summit which was to serve as a pedicle was situated a little below the outer angle of the eye. This flap, which when it was dissected up was an inch and a half long, and half an inch wide at its outer part, was now twisted upon its pedicle and applied in the surface of the wound made by the removal of the part of the eyelid. It exactly fitted, and was fixed by three sutures. The wound on the cheek was also united by suture, and a simple slightly compressing dressing was put over the whole.

During the first few days after the operation, the wounds and the flap of skin swelled very much, but after this had ceased the adhesion was found complete. Notwithstanding two severe attacks of erysipelas, the reparation was in the end more perfect than could have been imagined; the punctum lachrymale having been preserved, there was no running of tears over the cheek, and the fibres of the orbicularis palpebrarum that remained gave the new eyelid a certain degree of natural motion.

The subject of the second case was a scrofulous woman of twenty-three, who was also under the care of M. Jobert, with ectropion of the left upper eyelid, which from cauterization and other severe treatment was in a completely incurable state. An incision an inch and a half long was made horizontally along the affected eyelid. A flap of skin of an oval form, and of the same size as the previous incision, was then cut out from the cheek. Its pedicle was at the level of the upper and outer part of the malar bone, and it was inclosed between two vertical lateral incisions and an inferior incision which was slightly rounded.—This portion being dissected up was twisted on its pedicle applied on its under surface between the edges of the incision in the eyelid, and retained there by three sutures and a simple dressing.

The operation succeeded completely; the eye, which was before constantly exposed, was fairly covered by the new eyelid, which by the actions of what remained of the orbicularis muscle performed all the natural motions. A second operation of a somewhat similar kind was subsequently performed with the same success for the reparation of a loss of substance in the situation of the eyebrow. In this case a portion of the skin from the temple, which was in part covered with hair, was taken for the flap; the hairs continued to grow, and by cutting them to a proper length, they formed an excellent substitute for the lost eyebrow.

The third case was one of ectropion of the lower eyelid from a burn, which was treated in the same manner as the second, with the same favourable result.

The fourth was that of a young woman who from an acute inflammation and sloughing had lost the whole of the left upper eyelid except its free border, which contained the eyelashes, the cartilage, and the meibomian glands, from which a sticky fluid constantly running had fixed this remnant of the upper eyelid to the edge of the lower. There was acute inflammation of the exposed surface of the eye.

M. Blandin cut a flap of skin from the forehead, of an oval form with its pedicle at the root of the nose. Then having cut off the edges of the ulcerated aperture, he turned down the flap over it, and fastened it to them by sutures. Notwithstanding a very severe attack of erysipelas, the flap adhered perfectly at all parts. The new eyelid had lashes, and even a slight power of motion, though the orbicularis had been entirely destroyed; for a portion of the frontalis muscle turned down with the flap of skin preserved its contractility, and by the transverse position in which its fibres were now placed, it enabled the eyelid to be slightly raised.

The last case was one of ectropion of the lower eyelid, which was treated like the second and third, by fitting a flap of skin into the space between the edges of an incision made along the everted part. It was successful, and the eye obtained almost complete protection from the new eyelid.—*British and Foreign Medical Review*, from *Gazette Med. de Paris*, January 13, 1840.

34. *Apoplexy of the Eyes*.—Dr. HOLSCHER relates in the *Hannoversche Annalen* (B. II. h. 4) the following interesting case of Congestive Amaurosis. We transcribe the account from our valued cotemporary the *British and Foreign Medical Review*. A robust country girl of about 18, was hard at work in the harvest field one hot day, and had been frequently stooping to bind up sheaves, when, without any external cause, but with great congestion of blood about the head, she became suddenly blind. When examined a short time after, all sight was lost; the eyes were fixed and felt tense; the conjunctiva was very vascular, there was considerable congestion about the head, and the carotid arteries pulsa-

ted strongly. The pupils were widely dilated, and did not in the least contract even when a strong light was brought close to the eye. In the right eye, on viewing it from the side, a slight red tinge of the aqueous humour was perceptible; and with a lens a very small coagulum of blood was discovered lying at the bottom of the anterior chamber. The patient, except for her blindness, was in the same robust health which she had always enjoyed.

Feeling no doubt that the sudden loss of sight was produced by an equally sudden congestion, of the eye by blood rushing, as in apoplexy, into the vessels of the choroid and retina, and producing paralysis of the latter, the author ordered a bleeding, to sixteen ounces, from the arm, cold lotions to the head, a saline foot bath, saline medicines, and an extremely low diet. By a continuance of similar means, with the addition of mercury and a permanent blister at the back of the neck, the patient was so far recovered on the fourth day as to be able to distinguish objects placed before the eyes, and in three weeks she returned to the country with her sight perfectly restored.

35. Amaurosis—softening of the optic nerves through their entire substance and length—softening of the thalami.—A man 37 years of age who had been blind for three years died of chronic dysentery in the Aberdeen Hospital. On post mortem examination Dr. Alex. Kilgour found adhesion between the dura mater and arachnoid; the subarachnoid tissue hypertrophied, and the tela arachnoidea in consequence easily dissected from the pia mater over the whole surface of the brain. The optic nerves were of a pearly or slight yellowish appearance, flat and thin like bands of tape, much diminished in size, and their commissure soft with some liquid in the centre of it. They were traced of the same consistence and appearance into the thalami, which were also softer than usual.—*Ed. Med. and Surg. Journal*, April, 1840.

36. Cure of Squinting by Division of the Internal straight Muscle of the Eye.—Prof. DIEFFENBACH of Berlin has applied the operation of tenotomy to the cure of squinting. It is stated that on the 28th of March last, he operated on his forty-first case; and that in a fortnight after the division of the muscle, it is impossible to distinguish which eye was operated on.

The following are the three first cases in which this distinguished surgeon resorted to the above means of cure.

Case 1.—The subject of this operation was a child seven years old, whose eye was drawn far into the inner angle of the eyelids so as to produce considerable disfigurement. The operation was performed in the following manner:—The head of the child was held against the chest of one assistant, while another with two hooks kept the eyelids widely apart. The operator then passed a third hook, which he gave to a third assistant to hold, through the conjunctiva, and to some depth in the subjacent cellular tissue at the internal canthus. He next fixed a fine double hook in the sclerotica at the inner angle, and, taking it in his left hand, drew the eye outwards. Then cutting into the conjunctiva close to the ball, where it is continued from it to the internal canthus, and penetrating more deeply by separating the cellular tissue by the side of the sclerotica, he divided the internal rectus muscle close to its insertion with a fine pair of scissors. The eye was immediately drawn outwards by the external rectus, as if it had received an electric shock; and in another instant became straight, so that there was no difference perceptible between its direction and that of the other eye.

The hæmorrhage during the operation was but slight, though sufficient to impede it. The after-treatment consisted of cold lotions; no inflammation ensued, and within eight days the cure was completed.

Case 2.—Carl Gerhard, aged 10, affected with squint since his fourth year. His parents wishing him to become a printer, were anxious to have this defect removed, as it interfered with composing. The right eye was so completely drawn into the inner angle, that, on a first view, the point of junction of the iris and sclerotica formed the centre of the anterior surface of the eyeball. By an

effort the eye could be drawn from the canthus and placed straight, but could not be turned at all outwards. The operation was performed as in the last case, the conjunctiva being cut through, and the sclerótica laid bare to the extent of four lines, in order to bring the muscle into view, which was cut with a curved scissors as before. The squint was gone; the eyeball, when at rest, stood nearly straight, or rather a little turned outwards; and could be turned more readily by the patient's efforts in this direction than inwards. All the other movements of the eye were free. The bleeding was here much less than in the former case, and caused no interruption. The sudden turning of the eyeball outwards, observed in the first case, did not take place here.

The boy felt quite well on the following day. He could separate the eyelids without difficulty. The conjunctiva in the inner angle of the eye was red. The eye was nearly straight, only turned a little more outwards than the other. In eight days the cure was complete, and the eye quite straight.

Case. 3. Albert Victor, aged 15, affected with strabismus of the left eye since his earliest infancy. The eyeball was turned deeply into the inner angle; by an effort of the will it could be turned straight; but on this effort being relaxed, it instantly returned to the former position. The operation was performed precisely in the same manner, it being only here specified that the external incision in the conjunctiva was semilunar, and that the muscle was cut by introducing the pointed blade of the scissors beneath it. As soon as the hook that held the eye was removed, the ball turned at first outwards, but in a moment returned to the straight position. The edges of the wound did not gape, so that the external incision was barely perceptible. The eye was covered with a cold poultice, and the patient subjected to the antiphlogistic regimen. In eight days the cure was complete, and the squint entirely gone.—*Medizinische Zeitung*; and *British and For. Medical Review*, April, 1840.

P. BENNET LUCAS Esq. reports in the *LANCET* (April 18, 1840) the following case in which he has operated with success.

"Mary Anne Daly, aged 6, was born with her eyes perfectly straight. After the measles she suffered much from repeated attacks of strumous ophthalmia, on being cured of which it was found that her right eye was permanently turned deeply into the inner canthus, with also a slight degree of obliquity upwards.—The strabismus has existed for three years. When the unaffected eye is closed the turned-in one endeavours to right itself, and the child, by an effort, can erect it as far as the centre of the orbital axis, but it speedily returns to its abnormal condition. The child is powerfully strong, of very full habit, and of a strumous diathesis.

April 11, 1840. In the presence, and with the kind assistance of Mr. Fitzmaurice, Mr. Wardrop, Jun., and Mr. Alexander, I proceeded to perform the operation for the division of the internal rectus muscle, in the following manner:—The child was received in the lap of one assistant, and her head allowed to rest on his right arm and chest, by which it was partially secured. The eyelids were kept apart by Mr. Fitzmaurice, and the struggles were prevented as much as possible. With the forceps and an artificial pupil knife I easily divided the conjunctiva from below upwards, about three lines distant from the cornea, and thus exposed the sclerotic coat. The edges of the incision almost immediately became swollen, from the effusion of blood and tears into the connecting reticular tissue, forming a partial chemosis. Very slight hæmorrhage took place from the divided vessels of the conjunctiva, which was checked by the application of cold water. Upon the eye being again exposed, the incision was readily recognised, and, introducing a small blunt probe between its edges, I separated the reticular tissue, connecting the inner portion of the conjunctiva to a sufficient extent to enable me to reach the insertion of the inner rectus; I then introduced a bent probe; and directing it from below upwards had little difficulty in inserting it between the tendon of the muscle as it approached its insertion, and the sclerotic coat. Thus having the muscle on the probe at my command, I allowed the eye to rest for a moment or two, and then, carefully and gently drawing

the tendon towards the incision of the conjunctiva, I divided it with a pair of common scissors, and withdrew the probe.

The eye soon resumed its normal position, and the axes of both harmoniously corresponded. On the division of the muscle the eye was not forcibly drawn outwards, it gradually returned to its place. The lids were now allowed to remain closed; a layer of lint, dipped in cold water, was placed over them, the following powder was given, and the child soon after fell asleep:—Calomel, 2 grs.; James's powder, 3 grs.

12th. Both eyes are perfectly straight, and follow each other's movements with regularity. The child's bowels have been moved three times, and in all respects she is free from fever and excitement.

Mr. Lucas has operated upon a second case equally successfully, and also upon an old woman of 60 with benefit.

Dr. Franz reports in recent numbers of the *London Med. Gazette* seven cases in which he has operated, and others are related by Herbert Mayo, Esq., and Dr. Edward J. Scott.

So far experience seems to be in favour of the measure which is certainly a very beautiful and apparently simple one.

SURGERY.

37. *Efficacy of cold water, in a descending douche, for old ulcers of the feet.* By Dr. BUTZKE of Schwétz.—Atonic ulcers of the feet are very difficult to cure. They may continue without any internal cause, from a local secretion having become necessary to the system, or from the diminution of vital energy, or from organic degeneration of the skin and cellular membrane in the vicinity of the diseased surface. Dr. Butzke has succeeded in curing these ulcers easily and perfectly by the cold douche, which, by its enlivening and astringent power, removes the local atony of the skin round the ulcer; and this without repose being rigidly enforced, and without purgatives or limited diet. The method adopted was as follows: The water was brought from a spring into a wooden cistern four feet long, two broad, and two deep. On one side of the cistern, just above its bottom, were four wooden pipes, out of which the water fell from a height of six feet, in a strong unbroken stream. A bench was placed in front of the cistern, and a small footstool under the streams of water. The patient sat astride the bench, so that only the diseased foot, which was placed upon the footstool, was touched by the water. The douche was generally applied for half an hour, or in ulcers of a very bad kind, for an hour, every afternoon, without regarding the weather. When the douche was over, the foot was wiped dry and bandaged, the ulcer being merely covered with charpie.

The first effect of the douche was acute pain in the ulcer, which was sometimes so violent, that it was necessary to discontinue the application in ten minutes; then there came on a dark phlegmonous redness of the skin near the ulcer, and occasionally a slight hemorrhage from the sore. When the douche was over, the secondary effects were a peculiar crawling and itching on the surface of the ulcer, considerably increased heat, swelling, and a rosy colour of the surrounding skin, together with the secretion of a thin lymphatic pus from the ulcer, and an increase of perspiration in the diseased extremity. The douche was less efficacious in herpetic ulcers of the feet; and acrofulous caries of the lower extremities; yet even in these cases one half of the patients were cured.—*Land. Med. Gaz.* March, 1840, from *Med. Zeit.* and *Schmidt's Jahrbücher*.

38. *Treatment of Gonorrhœa by frequent injections of a weak solution of Sulphate of Zinc.*—A writer in the *Lancet* (Feb. 22d, 1840,) whose name is not given, boasts of having been very successful in the treatment of gonorrhœa by the injection into the urethra, at intervals of 20 minutes or every half hour during the day, of a solution of sulphate of zinc in the proportion of one grain to

the ounce of water. This solution should be still further diluted if it cause pain; and before each injection a jet of urine should be discharged, in order to clear out any morbid contents that may have accumulated in the canal.

"The immediate effects of this application, if properly performed," are stated to be "a very slight smarting sensation in the canal, scarcely amounting to pain, and succeeded very soon by marked relief, in passing water. The scalding becomes greatly lessened after each injection, and is soon completely removed, the cure, in light cases, being accomplished in 24 hours, and the most severe which I have had an opportunity of treating, always yielding in the course of three or four days, at furthest. If any pain be caused by the injection, it may be removed at once, by injecting a little cold water immediately afterwards, and diluting the solution a little more. However, it ought to be of such strength as to produce a slight tickling, or itching sensation in the part, and this will subside altogether in a few moments.

39. *Incontinence of Urine, during sleep, in Females.*—E. W. DUFFIN, Esq., relates in the *Lancet*, (April 11, 1840,) a case of this in a female 19 years of age, which had existed ever since infancy and had resisted various means, medical and moral. She had an advantageous offer of marriage which she could not accept in consequence of her infirmity, and this preyed so upon her spirits that it was feared she would commit suicide. Mr. Duffin being consulted it occurred to him to establish a perpetual monitor at the orifice of the urethra. For this purpose he applied lunar caustic freely, to about an inch in extent, along the mucous lining of the urethral canal, so as to excite acute inflammation of the part. "This had the desired effect. When the urine passed over the irritated surface, the pain it produced was sufficient to awaken the patient, and arouse the sphincter vesicæ to the performance of its office. At first she slept but little, the scalding being very troublesome, from the urine almost constantly flowing; but in the course of a week the bladder admitted of a natural accumulation of urine, and the intervals between the micturations were proportionally increased. A few weeks sufficed to completely correct the habit, though it was necessary to repeat the application of the caustic three times at intervals of fourteen or sixteen days, as the inflammation subsided. She has had no relapse during the last four months, and is to be married very shortly."

40. *Case of Gun-shot Wound in which the Patella was carried away, and the Knee-joint completely laid open, successfully treated.* By W. WARD, Esq.—On the evening of the 2d November, 1838, I was called to attend Mr. E. M., residing six miles from Huntingdon, who, on his return from shooting, had received a gun-shot wound of the right knee, in attempting to force his dog from its kennel with the butt-end of a loaded gun.

When I arrived at his residence, I found that he had been removed to bed, with the assistance of my friend, Mr. Abbott, Surgeon, of Cambridge, who fortunately happened to arrive in the village a few minutes after the accident occurred, and whose long experience and well-known professional talents rendered his opinion and advice extremely valuable in this very remarkable case.

The contents of the gun had struck the patella on the outside of the knee, carrying away the whole of that bone, except a small, solid, triangular portion which still remained attached to the ligament: there was a nearly circular wound of the integuments, completely exposing the joint, and sufficiently large to admit my whole hand into the joint between the tibia and femur; but the cartilages of those bones appeared uninjured. The propriety of immediate amputation was the first subject which suggested itself. Upon mature deliberation, however, we resolved to attempt to save the limb, for the following reasons:—First, Because the exposed bones, femur and tibia, and their cartilages, were uninjured. Secondly, Because the soft parts around the wound not being lacerated nor contused, rendered it less probable that extensive sloughing would take place. Thirdly, Because our patient was young, of good constitution and temperate habits, having recently recovered from a serious wound of the thumb, from the

bursting of his gun early in September, the judicious dietetic treatment enjoined by the surgeon who attended him on that occasion, which had been continued to the present time, had brought him into the most favourable condition for sustaining the ill effects likely to arise from so formidable an injury.

The patient was placed on his back, with the knee slightly flexed: a large poultice applied to the wound, and a full dose of opium given. He passed a quiet night; and in the morning I found him in good spirits, with a quiet and regular pulse, and with merely a slight aching of the knee. No unfavourable symptoms, either local or constitutional, occurred during the progress of the case, nor was his pulse even in any degree accelerated. An anodyne at bedtime for a few nights, and occasional aperients, were the only medicines required. Poulitices were continued until granulations began to arise; after which (the remaining small portion of patella having been removed) the surface was dressed with lint dipped in oil, and strips of adhesive plaster were applied in various directions, to assist in approximating the edges of the wound. On the 21st of January, 1839, the wound being quite healed, Mr. M. was able to dress himself, and sit up in a chair. In a short time, with the aid of a suitable splint and bandage, he went upon crutches; and in the middle of March, he came to my house, six miles, on horseback.

He has remained well to the present time, and has long discontinued wearing a splint or any application to the knee. The cicatrix is very firm, and there is considerable motion of the joint; so that Mr. M. can not only walk well without a stick, and even run without much inconvenience, but in November last I saw him dancing quadrilles at a ball in this town.

The foregoing remarkable case is not altogether uninteresting; 1st, As it seems to show to how great an extent we may trust to nature's efforts when assisted by a sound constitution and healthy temperament; and, 2dly, As it tends to confirm the observation of writers on surgery, that large wounds of joints are not so commonly, as small or punctured wounds, followed by severe constitutional disturbance.—*Guy's Hospital Reports*, April, 1840.

41. *Case of Dislocation of the Shoulder-joint, with Fracture of the Humerus.* By J. A. HINGESON.—Mr. P.—, aged 63, of a spare habit, and in declining health; the muscular structure being slender and feeble.

Occasion.—On the 20th of October, 1839, while going down the cellar stairs with some heavy ledgers in both arms, his foot caught against a projection on the edge of the steps, and he tripped and pitched down head foremost. He fell with the left arm stretched out, and at the same time received a blow on the back of the humerus; by which violence, it would seem, the arm was knocked forward; while the head of the bone was pulled backwards by the scapular muscles, the scapula itself being the fulcrum. The head of the humerus was in this manner at once both fractured and dislocated, the fracture traversing the anatomical neck of the humerus.

Signs.—A falling down of the left shoulder; empty glenoid cavity; arm close to the side; the patient supporting the elbow of the injured arm in the opposite hand; the palm of the hand of the injured limb lying flat against the stomach (half-supine). On looking at the patient a short distance off, there was a visible protuberance under the clavicle, elevating the pectoral muscles; the axis of the limb, however, not being that of a dislocated shoulder. On examining the shoulder by touch, the head of the humerus was easily perceptible to the fingers of the operator, both under the clavicle and in the axilla. By placing the knee under the axilla, and making the usual extension for reducing dislocation, the operator, while in the act of pressing down the elbow, felt the grating of a fracture under the hand that grasped the shoulder-joint. Then, by grasping the shoulder and dislocated head of the humerus with the fingers of the one hand, and at the same time (the knee being still in the axilla) grasping the elbow with the other hand and jerking the shaft of the humerus upwards and outwards, the grating of the fracture became perceptible, frequent, and unequivocal. On the operator removing his hands and not interfering the least with the injured limb,

but steadily looking at it in front, he could observe (as the patient was very thin) a manifest incongruity between the site of the dislocated head and the axis of the pendulous shaft of the bone. On searching at the top of the bone close to the dislocation and fracture, the fingers of the operator could be slipped into the fissure caused by the fracture between the separated ends of the bone.

The *treatment* was simply that of supporting the limb in a sling; and of the application of poultices, fomentations, &c. to assuage pain.

The *constitutional symptoms* set in reluctantly and mildly. The pain was not so great as is usual in cases of fracture through a joint, and sleep was easily obtained by the syrup of poppies. Œdema slowly arose along the whole of the limb; and the back of the arm and parts about the elbow became greatly distended, as well as discoloured from ecchymosed blood.

The position which the patient found he could assume the most easily to himself, was that of sitting up in a chair with the left foot raised on a stool, and the elbow of the injured limb supported on the left knee, with the fore-arm held half-supine by the sound hand against the stomach. The sling round the neck could not be borne while it supported the elbow, but only when suspending the wrist alone.

Progress and issue of the case.—As the case proceeded, there was to be remarked a difficulty of supination and extension of the fore-arm, an inability to raise the elbow from the side, and a partial filling up of the glenoid cavity. At this period (December 16) there were all the signs of simple dislocation as true as true could be, with the remarkable fixture of the fore-arm at a right angle across the body. Indeed, if this case, as it then was, had been seen for the first time, the surgeon would, on a *prima-facie* view of it, have had no hesitation in pronouncing it to be an unreduced dislocation; and on this account, the subsidence of the swelling was awaited with some impatience, in order to make a more accurate examination of the condition of the joint.

By the 21st of December (exactly two months after the accident) the shoulder was carefully examined, and a drawing made of it. The condition of the limb was as follows:—

First, The head of the humerus was broken off, and lying under the outer end of the clavicle in front of the coracoid process of the scapula.

Secondly, the glenoid cavity was empty, but somewhat filled up anteriorly by the head of the humerus resting on the anterior edge of the articulating cup.

Thirdly, The fractured end of the shaft of the humerus was touching the under edge of the articulating cup, and lying in *juxta* position to the head of the humerus, but at an obtuse angle with it.

Fourthly, A line was running visibly between the top of the shaft of the bone and its head, with a perceptible depression between the two separated portions of bone, showing the nature of the injury unequivocally.

Fifthly, Coagulable lymph had been thrown out around the injury, but was in progress of absorption.

Sixthly, the belly of the biceps muscle was attenuated, the muscle itself being disabled. It was this disability of the biceps muscle which was the cause of the inability in the movements of the fore-arm; for the following reasons:

(1) The long head of the biceps was interfered with in some manner at its origin in the edge of the glenoid cavity, and probably also the short head at the coracoid process; the tendon having been injured, lacerated, entangled, or thrown out of its groove, so as to render it unserviceable.

(2) The belly of the muscle was wasting, upon the common principle of absorption, in parts becoming useless.

(3) The disability of the muscle prevented the flexion of the fore-arm.

(4) The tonic or indeterminate contraction of the muscle prevented extension of the fore-arm.

(5) The same tonic contraction kept the fascia of the fore-arm "taut," (as sailors call a rope tightly stretched,) by means of the fascial process extending from the biceps tendon just before its insertion into the tubercle of the radius: by being kept thus "taut," the fascia effectually restrained supination.

Of the moveabilities of the limb, there were, 1st, Rotation outwards. 2dly, Extension of the fore-arm. 3dly, Supination: and 4thly, Elevation of the humerus from the side—all existing clearly, in an absolute, though limited degree. There was no union between the fractured head and shaft of the bone: there was an easy, though very limited play of the fractured end of the humerus at the lower edge of the glenoid cavity, and a false joint was probably in a state of formation. This moveability of the broken end of the bone, as well as the existence of the four elementary movements above stated, was quite sufficient to warrant the opinion, that, by the practice of passive motion daily, all the under movements of the shoulder-joint would be recovered.

Before this recovery was accomplished, the patient died, January 23, 1840, three months from the time of his receiving the injury. He sank, worn out by constitutional irritation. All the omens of death settled upon him. Extreme nervous exhaustion, insomnolence, very irregular and difficult respiration (orthopnea), a pulse becoming progressively more and more accelerated, tumultuous and remote action of the heart, thirst, loss of appetite, wasting, delirium, cedema, petechiæ, anasarca, and ascites, only foretold and brought in the inevitable event.

Before this event arrived, he was able to raise his fingers to his lips, and to rest upon the elbow of the injured arm.

Permission was obtained to remove the limb; and the dissection of the parts about the joint presented the following appearances:

The muscles were shrivelled, but free from effusion. Beneath the deltoid, the humerus close to the neck was found to have been broken into six pieces, and united by new bone. The glenoid cavity was seen empty, and covered with its cartilage; the axis of the limb being directed towards it. The head of the humerus was felt beneath the glenoid cavity, resting on the inferior costa, just below the cervix scapulæ, with its articulating surface directed downwards. It was closely invested by its capsular ligament, which was entire; the breach caused by the dislocation having been repaired. On opening it, the head of the bone presented its usual appearance, retaining its cartilage, and being smooth and polished. The tendons of the spinati and subscapularis appeared thickened; but were entire, as if they had been torn and repaired. The long tendon of the biceps was torn from its origin, and entangled among the fragments of the fracture, above which it could not be traced.

The motion enjoyed by the articulation was very limited, being restrained by a process of union going on between the glenoid cavity and a fragment of the humerus lying in contact with it. This union was chiefly by means of an imperfectly ossified matter, and therefore allowing a slight degree of motion. This union might probably have been prevented by a continuance of passive motion.—*Guy's Hospital Reports*, April, 1840.

42. *Practical Hints on the Treatment of Strictures.* By BRANSEY B. COOPER, Esq.—By stricture of the urethra is meant a contraction in the calibre of that canal, which causes a difficulty in the expulsion of urine. Strictures have been divided by most authors into permanent and spasmodic; and some have added a third class, which they have termed "mixed strictures." I am inclined to believe, however, that the doctrine of spasmodic strictures has its sole origin in the hypothesis, that the urethra is partially composed of muscular fibres; of which, in my opinion, there is no evidence whatever. Mr. Howship has stated, that he has proved the existence of muscular fibres in the urethra by demonstrating the power of that canal to expel by its own efforts a moderately sized bougie: but this is a power which, in my experience, I must confess I have never seen it exert, except when the bougie was passed up to the bulb, to which a muscular apparatus appertains. Moreover, Sir Charles Bell's experiments sufficiently prove, in my opinion, the non-existence of any muscular action in that portion of the urethra which is anterior to the bulb. The error has doubtless arisen from the circumstance, that the phenomena attending sudden obstruction of the urethra are very similar, but not identical, with the contraction of

muscular fibre. When a portion of the erectile tissue of the corpus spongiosum is suddenly distended from some morbid cause, in the same manner as the whole of it is naturally distended under venereal excitement, the urethra is partially contracted, as, in the latter case, it is in its entire course; and this contraction, from its suddenness, is attributed to the action of muscular fibre. The fact is, that any cause which produces a partial determination of blood to the corpus spongiosum necessarily produces also a sudden and partial obstruction in the urethra. The fallacy of regarding these obstructions as spasmodic contractions has doubtless been strengthened by the observation, that they are relieved by the same remedies as the latter—by bleeding, purging; by nauseating medicines, the warm bath, &c. There is no doubt, however, that if the distention takes place either at the bulb or at the membranous portion of the urethra, muscular fibre may be secondarily affected, both those parts being under the influence of muscle.

The kind of obstruction which I have just described is properly defined by the term "irritable stricture"—an affection frequently induced by an irritable state of the constitution; and requiring, as I shall afterwards show, to be treated by sedatives administered to the system at large. Stricture of the urethra may also result from diseases of the surrounding parts, as of the prostate gland, the rectum, or bladder; or finally, as is most generally the case, it is the effect of some morbid action set up in the urethra itself, one of the most frequent kinds of which is inflammation produced by protracted gonorrhoea. The first object of the surgeon, who is called upon to treat this affection, should be, to make himself acquainted as fully as possible with its precise cause. Its most frequent seat will be found to be those portions of the urethra which are most vascular, and consequently most irritable and liable to disease; viz. the membranous portion, and the bulb.

In speaking of the treatment of stricture, I would first impress on the minds of my readers, that something more is to be thought of than the removal of the mere obstruction in the urethra. It will generally be found that the mechanical application of instruments will contribute but little towards a radical cure, unless combined with the judicious exhibition of constitutional remedies. Strictures of recent date may always be cured by gentle means, and frequently by constitutional remedies alone; and even when they have reached the state of permanent obstruction to the passage of the urine, their cure may be effected without the application of force in the passing of instruments. In the cure of stricture by the use of the bougie, the object, in my opinion, ought not to be, to force the instrument through the obstruction, but to press it upon it, or into its substance, where the nature of the latter admits of it, so as to alter the action going on in it, to induce inflammation, softening down, and removal by absorption; in short, to employ the instrument "*arte non vi*," as was recommended by the great Dupuytren. Of course, such general remedies should be exhibited at the same time as appear likely to conduce to the removal of the obstruction. Where the stricture is irritable, as is indicated by its tendency to bleed, and by the peculiar diathesis of the patient, recourse should be had to opiates, the warm bath, and caustic bougies. In cases where a disposition to spasm is observed, bleeding, opium, and belladonna injections will be found useful. Where the stricture, from its thickness, resists the gentle application of bougies, I have been very successful in rendering it permeable by injecting warm water into the urethra from a long canula, to which a syringe is attached; and by careful, continued and gentle pressure with this instrument, I have almost invariably succeeded in effecting a radical cure. In cases of irritable stricture, which I have described above, sedatives should be administered to allay the constitutional irritation; leeches may be applied to the perinæum, as also belladonna fomentations, and the gentle use of the bougie may be recommended; but should the application of this be followed by bleeding and great pain, a very small piece of potassa fusa may be passed down to the stricture, and will be found to be an almost infallible remedy for the symptoms of irritability. In cases of this kind force

should never be used; for it is frequently destructive of the organization of the urethra, and is sometimes fatal to the patient.

The forcible introduction of a catheter or sound into the bladder is only justifiable in a few cases; and never where it cannot be effected without great violence, and without risk of laceration. Where the patient presents severe symptoms of retention, requiring immediate relief, such as great distention of the bladder, great constitutional irritation, and violent pain, an attempt should be made to pass a catheter: and if this instrument can be brought to a right angle to the position of the recumbent patient, and then, and not till then, becomes obstructed in its progress to the bladder, it is plain that the obstruction is situated at the membranous part of the urethra, where the operator may safely use force, if he apply it judiciously, and by depressing the handle of the instrument: for the risk which would be incurred in other portions of the urethra by such a proceeding is here in a great measure precluded by this portion of the canal being firmly connected to the surrounding parts of the deep fascia of the perineum, and by the instrument itself being here guided and protected in its course by the *os pubis*.

But even in these cases, it is impossible to describe the *degree* of force which it is proper to resort to: language is inadequate to express the infinitely various exigencies of particular cases: the extent to which force should be carried can only be prescribed by the experience and tact of a practised surgeon, who has a perfect knowledge of the anatomy of the parts. Some surgeons would in such cases recommend force sufficient to thrust the instrument into the bladder: but I am confident that this is bad practice, and that it is much safer to cut down upon the membranous portion of the urethra than to risk the laceration of the canal, the perforation of the prostate gland, or the forcing of the instrument into the rectum; for all these are casualties to which violent treaters of stricture are liable; and I have known them to occur frequently. A stricture lacerated by this operation is, moreover, almost certain to recur; nay, to become more impervious than ever, as soon as the instrument is no longer regularly introduced: so that not only are the above risks incurred, but no ultimate good is effected.

In illustration of my views respecting those peculiar circumstances which justify the use of force, I will relate a case in which I preferred adopting this method of relief to an operation.—A man was admitted into Guy's Hospital with a stricture, which, from its origin, might be called traumatic; but which in reality was not so, as the accident to which it was to be referred had not caused laceration of the urethra, but only inflammation of the surrounding parts, consequent thickening, and diminution of the calibre of the canal, as from ordinary causes. I may here observe, that accidental contusion may produce stricture in any part of the canal; while from disease, as has been stated above, it most frequently occurs either in the bulb or membranous portion. The peculiar symptom in this man was the constant dribbling of his water from him; so that he did not appear to be suffering from retention of urine, though, in fact, there were present many urgent symptoms of that state, viz. pain in the region of the bladder, pain in the loins, numbness of the thighs, highly ammoniacal urine containing mucus in considerable quantity. There is no symptom occurring in cases of permanent stricture which more imperatively requires attention than this involuntary dribbling of urine; which, though it precludes the necessity of an operation for the immediate relief of a patient, as in cases of perfect retention, still permits the most dangerous symptoms arising from dysuria to go on slowly, but surely, to the destruction of the patient. Convinced of this, and finding, on a minute examination of my present patient, from the smell of the urine, the distention of the bladder, and the tenderness in the hypogastric region, that the case was more urgent than was apparent on a cursory inspection, I at once attempted to pass a full sized catheter (No. 8) into the bladder. It penetrated without any difficulty, as far as the posterior part of the membranous portion of the urethra, but there encountered a sudden and definite obstacle to its further progress: to break down this, I used force, to which it at length yielded, and the instrument went into the bladder with a jerk. Now the circumstances which

in this case induced me to resort to force, were as follows: In the first place, the patient had so long laboured under aggravated symptoms of permanent stricture, that his state was already very precarious. Secondly, though the actual retention of urine was not, as usually happens, the most urgent symptom, a free passage into the bladder was nevertheless indispensable to his cure. Then, again, the prostate gland was healthy, as was proved by examination *per rectum*, and the position of the obstruction was favourable to the application of force; for guided by the forefinger of my left hand in the bowel, and making the deep fascia of the perinæum a fulcrum for the instrument, I was enabled to direct the latter with precision into the bladder, and at any rate, with as little danger as would attend the cutting into the membranous portion of the urethra, or the destruction of the stricture by caustic; one or other of which modes of relief I must otherwise have had recourse to. I hold, then, that where the symptoms are urgent, and the stricture is situated posteriorly to the deep fascia of the perinæum, force may be employed with propriety; but that where the stricture is at the bulb, though the symptoms are not more severe, an operation should be performed. In such cases as I have just described, however, force, as has been before observed, should only be used to the degree which the experience of the surgeon forbids him to exceed: where it remains without effect, and delay is admissible, warm baths, enemata, bleeding, or opium with small doses of tartarized antimony, may be tried as constitutional remedies, together with such local means as injection of solution of belladonna, or friction with mercurial or iodine ointment. Where the symptoms are urgent, and the surgeon, even after these pharmaceutical remedies, again attempts in vain to pass the catheter—always recollecting that much less force should be employed where the stricture is situated anteriorly to the membranous portion than in strictures of that region itself—he should immediately propose the operation of opening the membranous portion of the urethra, which is to be performed in the following manner:—

The patient should be placed in the same position as for the operation of lithotomy; and an incision of about two inches in length be made in the course of the raphe of the perinæum, dividing the superficial fascia. In lithotomy, the incision is invariably made to the left side of the raphe, obliquely from within outwards, and from above downwards; though in both operations the object is to open the urethra. In operating for stricture, however, there being no staff to serve as a guide to the membranous portion of the urethra, advantage is taken of the raphe, as a guide in cutting: whilst in lithotomy the less direct and more difficult course is adopted, in order that we may avoid wounding the bulb and the rectum, but that we may secure the division of the muscles of the perinæum, the passage of the urethra is retained in its situation by the staff which has been previously passed. After the incision has been made, the second step of the operation is to pass the forefinger of the left hand into the upper part of the wound, directing it towards the arch of the pubes; when the urethra will be readily felt, especially if the patient be desired to strain, as in the attempt to make water. An incision is then to be made into this distended and fluctuating canal; through which opening a female catheter is to be passed into the bladder, and the urine drawn off. The patient is thus relieved by an operation which is very simple and very easy to an anatomist; but which, it must be remembered, is only a palliative contributing in no wise to a radical cure, as the stricture which rendered it necessary still remains. The question now arises, in what manner a complete cure is to be effected. This depends upon the situation of the stricture. If, as is usually the case, it is behind the acrotum, the following means should be employed. The urine having been drawn off, as described, through a female catheter, a male catheter should be passed through the penis down to the stricture: its point should then be felt for, with the finger, in the incision which has been made in the perinæum; and will be perceptible through the thickness of the stricture, the distance between it and the finger being, of course, the depth of the adventitious growth which constitutes the stricture. This must next be divided by the knife; and the male catheter may then be passed on into the bladder, through the opening which had been made for the

introduction of the female catheter. The instrument is afterwards to be kept in the bladder, and the patient put to bed. I decidedly recommend that the catheter should be left in the bladder, though this practice has been condemned; for without it the divided stricture would certainly close again, and become more permanently firm than ever, the urine would be extravasated into the perineum, and the patient would be subjected to these additional sources of irritation, if nature did not convert the perineal opening into a permanent fistulous passage, which is sometimes effected by the formation of a new mucous lining, admitting the passage of the urine with impunity. Where the stricture is situated in the penis anteriorly to the scrotum, it is not safe to divide it with a knife, from the difficulty of afterwards closing the wound: and therefore it is better, in that case, only to draw off the urine through an incision in the membranous part of the urethra, by means of the female catheter, and to treat the stricture afterwards by passing bougies, in the same way as where immediate relief is not required. Strictures are found to yield much more readily to mechanical means after the urethra has been opened behind them; since they are then freed from the irritation induced by constant straining and other evils attendant on retention, and on slight suppression of urine, which probably takes place in some cases. The difficulty of overcoming a stricture by the passing of instruments, and the consequent necessity for such operations as I have just described, almost invariably originate in the reckless carelessness of a patient, or in his dread of applying for relief when the first symptoms of obstruction present themselves: for, as I have before stated, there is no case of stricture which cannot easily be cured without the use of force, if retention of urine does not occur, and induce the necessity of operating for the immediate relief of the patient.—*Ibid.*

43. *Aneurism of the Arteria Innominata—Ligature of Carotid and Subclavian Arteries.*—W. WICKHAM, Esq. communicated to the Royal Medico Chirurg. Soc. in May last a case of this description. The patient was a tall spare man, of sallow complexion, 55 years of age, and had followed the occupation of a sailor. He was admitted into the hospital in September, 1839, with a swelling over the right clavicle, about the size of a hen's egg, and having all the characters of aneurism of the arteria innominata. The tumour extended over the carotid artery at its lower part, reaching as high as the omo-hyoideus muscle, and also reached outwards over the subclavian artery. As it appeared impossible to place a ligature on the affected artery with success, the author, in consultation with his colleagues and Sir Astley Cooper, determined on tying the carotid and subclavian arteries. In pursuance of this resolution, the carotid was tied on the 25th of September, 1839, without any unusual circumstances. Immediately on the ligature being tightened, the sac was evidently reduced in size, and the force of the pulsation in the tumour diminished. The cough and dyspnoea, which had been prominent symptoms in the case, were also greatly and immediately relieved. At the end of three weeks the patient quitted the hospital, contrary to advice, and promised to return in a week or ten days. The tumour, at this time, was of the diminished size, to which it had been reduced at the time of the operation. Unfortunately, however, the man did not return until compelled to do so by dyspnoea, the consequence of the rapid increase of the tumour to more than double its original size. On the 3d of December it was determined to tie the subclavian artery, notwithstanding that the patient appeared to be almost at his last gasp from suffocation, so that great fears were entertained lest he should die under the operation. As soon as the artery was tied, the dyspnoea was so much relieved, that the man walked to his bed with ease, and from that time until he died, he continued free from any inconvenient pressure on the trachea. Four days after the operation he was seized suddenly with delirium, which, however, was soon relieved: from this time, the tumour slowly increased; but he recovered his strength sufficiently to wish to leave the hospital. On the 5th of February, the ligature having previously come away, he left the hospital, and lived until the 16th of that month, when he died from

hæmorrhage, consequent upon the bursting of the sac. Dissection showed the disease to have been seated, as was supposed, in the arteria innominata.—*Lancet*, 6th June, 1840.

MIDWIFERY.

44. *Effects of Parturition on the Nervous System of the Mother.*—The *Dublin Journal* for March last contains a highly interesting paper by Dr. Churchill on this subject, read before the Association of Physicians.

If a healthy woman be carefully examined previous to labour and after delivery "it is impossible," Dr. C. justly observes, "to overlook the great change which has taken place in her condition; even though her labour have been perfectly normal, of moderate duration, and with no accident subsequently.

"The condition in which the woman is placed, can not be considered as the consequence of the muscular exertion during labour, because it bears no proportion to it in amount and duration; and because the functions of other organs are more extensively deranged than we find them in cases of excessive exertion.

"What then is this state? to what is it owing? in what does it consist?

"It appears to me, to consist in a sudden and more or less severe *shock* to the nervous system, in consequence of the extraordinary disturbance to which parturition gives rise.

"I have called it a *nervous shock*, because the phrase is already in use amongst surgeons, to describe a similar state occurring after an accident or operation. For instance, a workman in a factory has a limb torn off by the machinery, and he dies in two or three hours; but neither from hæmorrhage nor inflammation, for the former was prevented by the torsion performed upon the arteries, and there had not time enough elapsed for the latter. A post-mortem examination reveals no cause of death. Of what then did he die? Of the nervous shock.

"The same explanation is given of the death which follows scalding or burning, provided it occur within a few hours.

"Now this *nervous shock* is precisely what may be observed in certain cases of labour, especially after operations, and it may produce equally fatal results. It is not, however, confined to these cases, but exists more or less in all, and it requires but a little care to recognise it.

"After ordinary labours, we find the sensibility of the brain generally diminished, though the organs of sense may be more sensitive than usual. The eye has lost its brightness, and expresses only languor and exhaustion: it is, however, more intolerant of light as the ear is of sound, and if careful attention be not paid to these two points, cerebral excitement may result.

"Again the pulse indicates a degree of collapse, from the increased frequency to which it had attained during the second stage; it shortly falls as much or nearly so below the usual standard: at which point it remains until the patient recovers from the nervous shock.

"The respiration generally preserves its relations with the frequency of the pulse, and may in accordance with it be rapid or slow and laboured. Various secretions dependent on nervous influence are changed in quantity and quality in consequence of the impression on the nervous system.

"The patient recovers from the shock, under ordinary circumstances, after a few hours' repose and quiet, though the indirect effects are rather more permanent: and the progress of the convalescence is generally in proportion to the rapidity and completeness of this restoration.

"So much for the nervous shock in its mildest form and under favourable circumstances. Now let us examine the condition of the patient, after a prolonged second stage, or after an operation; say that of version, in which the nervous shock is of an aggravated character.

"The functions of the brain are much below par—the patient is depressed, though not anxious, with a degree of exhaustion as though she had been stunned.

She lies on the bed without altering her position, with her eyes closed, or at least without observation; betrays no interest about her child, perhaps none about herself. The muscles are flaccid, and she can scarcely make an effort to move her limbs: her pulse is low and laboured, or quick and fluttering, and much weaker than usual: the respiration is either slow and oppressed, or hurried and panting; and the relation between the circulation and respiration is frequently broken.

"In this state she may remain a considerable time, and then only by very slow degrees rally; or if the amount of shock be too great for the system, she will gradually sink, the collapse will deepen, and she will die. If a post-mortem examination be made nothing is discerned to account for her death.

"As far as we can judge, she dies of the shock or impression made upon the nervous system primarily, and, through that, upon the whole organism.

"I shall now very shortly detail some cases which I have noted, illustrative of these remarks.

"A few weeks ago, I was called upon to attend Mrs. K —, in her first confinement. She was one of twins, and was of a delicate constitution and highly nervous temperament. She was taken with labour-pains about 9 A. M., which recurred slowly until 12, when I visited her. I found the os uteri undilated, though not rigid, and the bag of the waters beginning to form. As the pains were rather feeble and distant, I left her for a short time, with directions to be sent for as soon as the progress of the labour quickened. In half an hour I was summoned in great haste, and on my arrival I found the child was born. The pains had suddenly increased in strength soon after I left, and three pains sufficed to expel the uterine contents.

"There was but the usual amount of discharge, and subsequently some clots were expelled. She suffered a good deal from after-pains: but her condition for some time after the labour occasioned me much uneasiness. She seemed to be in a state of complete collapse; she scarcely spoke, and then only in a whisper, but lay in a state of utter exhaustion. Her senses were morbidly sensitive; the pulse was 140, small, and weak; the respiration was feebly and languidly performed; and it seemed doubtful for some hours whether she would not sink.

"I requested a consultation, and my friend, Dr. Darley, was called in: he agreed with me that the case resembled exactly those where a severe nervous shock had been received; for excepting the after-pains, she had no local symptoms whatever.

"We ordered opiates (which, however, she could not bear), cordials, and gentle stimulants, &c. By degrees her system rallied, but it was long before she recovered. Her pulse remained about 115, but I found that her twin sister's pulse (in health and in a state of quiet) was 120; which, of course, relieved my anxiety on this score.

"The most remarkable circumstance connected with this case, is, that so severe a shock was produced by so short a labour; the time which elapsed from my ascertaining that dilatation of the os uteri had scarcely commenced, until the birth of the child, not exceeding half an hour.

"Similar depression is often seen after operations, and must be familiar to every accoucheur; from which some patients recover, and others die.

"But the patient may die from this cause, even though the labour be terminated by the natural efforts; as the following case will prove:—

"A patient in labour was admitted into the Western Lying-in Hospital, the year before last. The pains were tolerably strong, but the passages offered a good deal of resistance. Her condition continued favourable for about thirty hours, but then the pulse became more frequent, her skin hot, with a degree of restlessness; and a consultation was held. As a certain, though slow, progress was made, and as the suffering was not great, and, above all, as the patient expressed the utmost horror of instruments, it was determined to wait for two or three hours; and when I mention that it was by the advice of Dr. Darley that the delay was adopted, I offer the best defence of the line of practice to be pursued.

"In two hours the head was pressing through the vaginal orifice; in three, the child was born alive.

"During the last hour or two, however, the patient had suffered severely, and the expulsion of the child left her in a state of utter prostration. The nervous system seemed stunned; her countenance was expressive of complete exhaustion; the eyes were dull and heavy; the sensibility of both ears and eyes was diminished; the pulse was quick, weak, and fluttering; respiration rapid and panting, with deep sighing; the muscles were flaccid, and it required a great effort to move her limbs. Appropriate remedies were applied, but from this collapsed state she never rallied. There were no convulsive movements, and her intellect was clear until she died, which was in eight or ten hours.

"We examined the abdominal and pelvic viscera, but they were perfectly healthy, and not a trace of any injury could be discovered. As far as I am capable of deciding, I should say that this patient died of the *nervous shock*. No one could doubt that she had suffered from this cause; and, from the condition into which she was thrown, she never rallied.

"About four years ago, I was called (as physician to the Wellesley Dispensary) to see a poor woman, in Hollis' Court, who had been some time in labour, but who had not sent for assistance until an hour or two before I saw her. I found her suffering from a quick pulse, and some degree of fever. The head of the fœtus was in the pelvis, and there was plenty of space, but the pain made scarcely any impression upon the child. Upon consultation with Dr. Darley, it was deemed advisable to use the forceps. They were easily applied, and the patient was delivered of a still-born child without much difficulty. After the expulsion of the placenta, she appeared very much exhausted, and very weak; without headache, and possessing her reason: the pulse was very slow and weak, and the respiration hurried and panting. The usual restoratives were ordered, and she seemed rather better. On paying a second visit in the evening, I learned that she had remained in the state I left her until six P. M., (the operation was performed at mid-day), when she got weaker, and died rather suddenly. We obtained permission to examine the body, but discovered nothing to account for death; the abdominal and pelvic organs were perfectly healthy. and had suffered no injury.

"Recollecting the depressed state in which we had left her, and carefully investigating her subsequent symptoms, we came to the conclusion that her death was owing to the *nervous shock*.

"During the time that I was attached to the Wellesley Dispensary, we were summoned to a case at Ball's Bridge, which had been under the care of a midwife, and had been mismanaged. We found her with a quick pulse, hot skin, dry furred tongue, &c.; in short, with the usual symptoms which occur in a very prolonged second stage, with retention of urine in addition. From the latter she was immediately relieved; and no doubt could be entertained of the propriety of immediate delivery by the quickest means. I perforated the head of the child, but, from its putrid condition, found it difficult to extract it: I, therefore, introduced my hand for the purpose of turning, and brought down a foot; but, to our surprise, it was the foot of another child. I extracted it with tolerable ease; but it took a considerable time to bring away the putrid one. The placenta was extracted.

"During the first part of the operation the patient was delirious, but became quieter before it was finished. Afterwards she was exhausted and stunned; her breath laboured, sighing frequent, pulse rapid, small, and feeble, &c., &c.

"I saw her in two or three hours after the operation; she had not rallied, though she appeared somewhat relieved. Her intellect was entire: no convulsions had occurred, the pulse continued frequent and weak, and the respiration was sometimes hurried; at other times slow. There was no pain on pressing the abdomen, and no complaint of more soreness of the outlet than usual. I called the next morning, but found that she had died during the night, without any new symptom; she gradually sank; and at last, ceased to breathe.

"We could not obtain permission to open the body, and, therefore, this evi-

dence is wanting: but, from the symptoms, I do not myself doubt that the cause of death was the great shock necessarily arising from so tedious an operation under unfavourable circumstances.

"I could easily accumulate cases; but I think these will suffice, and I shall, therefore, conclude by drawing your attention to one or two circumstances noted in some of these cases, and to the treatment which I have found most successful.

"The patients most obnoxious to this effect of labour are delicate nervous women; those who have been allowed to continue too long in labour, or those with whom an operation is necessary; and the more severe the operation the more marked the symptoms, although I have seen them very striking after the mere extraction of the placenta.

"It will have been remarked that in all the fatal cases the patient made no effort to rally from the state of collapse; and this I have invariably observed in such cases. When a rally is made, all danger from the nervous shock is over.

"Another circumstance distinguishing all these cases is the total absence of any approach to convulsions, and the continued possession of the intellectual faculties until death: this is a very valuable guide in our diagnosis.

"In the treatment of these cases, the first object is, of course, to recover the patient from the collapse; but the most direct means are not the best. Vinous or spirituous stimulants are useful, but not the most useful remedies. I have always found opium the best means I could use; and I generally give it in the form of tincture, and in combination with ammonia. Ten drops of *lendenum* may be given every half hour, at first; then every hour, and, subsequently, less frequently. It appears to quiet the general disturbance, to diminish the shock to the brain, and to give the system time and opportunity to rally. At the same time a moderate portion of wine or spirits and water should be given at intervals sufficient to assist the effort to rally, but not so much as to cause violent reaction, and the patient be kept in perfect quiet, so as to encourage sleep. If this should take place, she will probably awake much refreshed, with a quieter pulse and equable respiration. If, on the contrary, the collapse should continue, our endeavours must be increased as the danger is more threatening.

"When the imminent danger is past, great care will be still requisite, and all mental and sensorial stimuli must be carefully regulated rather according to the part, than the then present state of the brain.

"The remainder of the cases I have selected I shall with your permission, postpone to another opportunity.

45. *On the Influence of Digitalis on the Contractions of the Uterus.* By M. PRADONEL.—The object of this paper is to recommend, from theory and from a limited practice, the administration of digitalis in false labour pains. The cases in which it has been found most useful are those in which during gestation there are vague pains in the uterus producing considerable suffering and fatigue, and those in which after delivery the pains continue for an unusually long period, for example, for more than two or three hours after the expulsion of the placenta. In these and in certain other cases in which it has been a common custom to administer opium, the author suggests that digitalis should be employed, which he believes acts by diminishing the force and frequency of the contractions of the uterus, as it is well known to do those of the heart. He has generally used an infusion of one fresh leaf or of two dried leaves in a cup of water, which is taken at once, or a drink, containing from thirty to sixty centigrammes of powdered leaves, of which the patient takes a spoonful every half hour or hour till the pains cease.—*Brit. and For. Med. Rev. from Bull. Gén. de Thérap.* Jan. 1840.

46. *Case of Metritis with Epilepsy, in which Separation and Expulsion of a great part of the Vagina and of the Neck of the Uterus, followed by recovery, took place.* By Dr. ANTONIO LONGHI.—Rosa Gatti, ætat. 27, was admitted, May 11, 1835, to the Milan hospital. Her health had, with the exception of occasional epileptiform attacks, hitherto been excellent. The catamenia had appeared

early, and were extremely copious, appearing sometimes twice a month. In February, 1835, suppression took place, without causing any serious inconvenience to the patient, and still existed at the time of her admission. Immoderately addicted to drinking and sexual indulgence, her propensity for the latter had of late been additionally excited by pruritus of the genitals. On the 8th of May she was seized with an epileptic fit of much greater intensity than usual; for this she had been twice bled, previous to her admission. When examined at the hospital, there was total loss of sensation and motion, with a comatose state; uterus somewhat enlarged, and found per vaginam, to be of the size usual at the third month of pregnancy; fetid yellow discharge from vagina; violent convulsions brought on by abdominal pressure. Copious bleeding was immediately ordered, and repeated on the 12th and 13th; the frequency of the epileptic paroxysms was thereby decreased, but all the other symptoms remained unchanged. After the application of eighteen leeches to the head, of four blisters, cupping at the occiput, &c., the coma had, on the 17th, in a great measure disappeared, and the patient answered some questions. The abdominal tenderness, however, increasing on the 18th, twenty-four leeches were applied to its most painful part, the epigastrium, and a grain of tartar emetic given in an emulsion, which was immediately rejected by vomiting. There still remained an increasing febrile movement; the pulse was hard and small; and lancinating pains were felt in the abdomen. On the 21st, in straining, as if to discharge the contents of the rectum, she felt a voluminous body pass through the vagina, which, as she fancied herself pregnant, she took for a fœtus. This body, on examination, was found of pyriform shape, with a semicircular aperture at the apex, in size somewhat larger than the healthy unimpregnated uterus, fetid, blackish, of moderate consistence at the base, from which part its cohesion diminished towards the apex. Carefully washed, it appeared of a dirty white colour, and covered with soft cellular membrane, the base rounded and smooth, with a small central opening. On introducing the finger within the great aperture at the apex, a large cavity was felt, terminating at the opposite end by a fleshy body; and on slitting up the walls of this cavity, they were found to consist of a part of the vaginal parietes, and the fleshy body of the neck of the uterus. The patient, still believing she had miscarried, obstinately refused all medicine. Emollient vaginal injections, however, were constantly employed, and a milk-diet ordered. Under this simple treatment the discharge from the vagina gradually decreased, as did also the fever and abdominal symptoms; and on the 18th of June, the patient was discharged in perfect health, with the exception of a slight yellow inodorous discharge. On this day, a careful examination, per vaginam, was for the first time made. The external parts were natural, the vagina notably contracted, especially at the upper part. At about the ordinary height, it ended in a firm cartilaginous ring, that scarcely allowed the passage of the index finger. Beyond this ring the finger entered a cavity, of considerable width, supposed to have been formed by the separation of the parts passed by the vagina. The finger, pushed still higher, touched two unequal small prominences, divided by a transverse fissure. The entire cavity was surrounded by a wall of lardaceous consistence, without callosity or ulceration. Immediately on leaving the hospital the patient returned to her old habits; but the pain and hemorrhage attending copulation were so great the first day, that she was obliged to desist. The vagina, however, gradually yielding, ceased to interfere with the gratification of her desires. Towards the end of June the menses reappeared, and flowed with the utmost regularity. The parts discharged are preserved at the Milan hospital. *Brit. and For. Med. Rev. from Giornale delle Scienze Med. Chir.* No. xxii.

47. *Case of Impacted Head, with great subsequent loss of Parts.*—The following case related by M. CAZENAVE of Bordeaux, affords a melancholy example of mismanagement. The patient, a primipara, ætat. 25, of diminutive stature, had enjoyed good health. As the labour did not advance, she was bled, had a bath, and took some ergot of rye; but in spite of pains, which continued for thirty-

six hours, no change was produced. After repeated attempts to apply the forceps, a second practitioner was called in, and he not succeeding better than the first, a third, and afterwards a fourth, were summoned to her assistance. They having tried in vain to apply the forceps, it was determined to turn the child, and this was effected with great difficulty, from the violence of the pains, and liquor amnii having escaped thirty-six hours previously. The body and arms were extracted, but the head remained impacted, in spite of every effort to disengage it. A fifth practitioner was now added, but he was not more fortunate in his attempts. It being now midnight, they determined to let her rest till the morning, hoping that fresh contractions would flatten the head and expel it. Accordingly, the next morning, the head was found in the vagina, and easily extracted. The labia swelled, and the woman was attacked with metropéritonitis and diarrhoea; general sloughing followed, large portions of ragged slough came away, and continued to do so until the 20th day. On seeing her nearly a month afterwards, M. Cazenave could find no traces of the labia, nymphæ, vagina, perineum, or anus; one large opening extended from the meatus urinarius to the coccyx, and showed that the recto-vaginal septum and lower part of the rectum were all destroyed; the urine did not pass by the urethra, and the feces continually accumulated in the cloaca which had thus been formed. Further examinations showed also, that about two inches and a half of the rectum had been destroyed, and that the neck of the bladder was obliterated. Under the use of topical bathing, injections, and mild nourishing diet, the health improved considerably, and the parietes of the huge cavity contracted somewhat; she was also enabled to pass a little urine by the urethra; still, however, the constant passage of feces and urine by the same opening produced severe inflammation of the part, with all the sympathetic derangements attendant upon such irritation, the health began to fail, and in this state of suffering she has remained up to the present time.

48. *Retroversion of the Uterus, treated by a new method.*—CHARLES HALPIN Esq., in an interesting article in the *Dublin Journal of Med. Sci.* for March last, after passing in review the modes of treatment recommended for retroversion uteri, relates a case occurring about the fourth month of pregnancy in which he resorted with success to a new method. In this case Mr. H. first tried two fingers of the right hand in the vagina, then two fingers of the right hand in the vagina and the thumb in the rectum. The patient exclaimed that "he was bursting something in her inside," and he was obliged to desist.

"I now relinquished all hope of being able to return the uterus safely by any introduction of the fingers or hand into the vagina or rectum, and retired with Dr. Finlay to consider our difficulties. I communicated my impressions to him; which were, that on bringing my fingers to bear upon the tumour, I found I could always move it to a certain extent, but after it reached this it became fixed, and I could feel the parietes of the uterus yielding under the very small point of contact afforded by my fingers; this gave rise to the sensation of rupturing the parts complained of.

I now saw clearly that my only chance of rescuing this woman from her perilous state would be in the use of some instrument which could be brought to bear equally on all parts of the tumour, and with which sufficient power could be applied to raise it fairly above the promontory of the sacrum.

"It instantly occurred to me, that *with the assistance of a bladder I should be able to inflate the pelvis, and thus raise its contents into the abdomen.* We acted on this suggestion. I attached a small recent bladder to the tube of a stomach-pump, with an air-tight piston, and having immersed it a few moments in warm water, to bring it to the heat of the body, I introduced it empty into the vagina, between the fundus of the uterus and the rectum. Retaining it within the vagina by holding my hands firmly across its orifice, Dr. F. inflated it slowly and steadily. After a time she complained of a sense of tension or bursting, but no pain. We then ceased throwing air into the bladder, allowing what was in already to remain, keeping up, as it did, a steady, equal, well-directed pressure on the tumour. After the expiration of five minutes, we threw more air into the

bladder, when the patient exclaimed slowly, 'Oh, now you are forcing something up to my stomach!' I retained the bladder some time longer in its situation; and then, previous to withdrawing it, permitted the escape of some air, I introduced my finger, and had the satisfaction of finding that the tumour was no longer in the pelvis, and that the os uteri lay within reach of my finger, pointing downwards and backwards. I then, and not till then, removed the apparatus."

In his remarks, Mr. Halpin states that he considers this instrument applicable to the retention of the uterus in its normal position, when replaced. The retroversion having been rectified, he would introduce, as a pessary, a gum-elastic bag constructed on this principle, and inflate it to a proper state of distension. It will remain without producing the least annoyance to the patient; and cannot, from its nature, obstruct the free passage of either urine or feces; whilst it will render the descent of the uterus within the pelvis a matter of impossibility.—*Med. Chirurg. Rev.* April, 1840.

49. *On the Situation of the Deciduous Membrane in Cases of Extra-Uterine Gestation.* By ROBERT LEE M. D.—A lady died suddenly, in 1829, from internal hæmorrhage, produced by rupture of the right fallopian tube, which contained an ovum. On opening the tube, and examining the different parts of the ovum, I found a deciduous membrane every where surrounding the chorion, and closely adhering to the inner surface of the tube, as the decidua usually does to the lining membrane of the uterus in ordinary gestation. Within the decidua the chorion, placenta, amnion, and embryo, were distinctly seen. The uterus was larger than natural, and there was no appearance of decidua lining its internal membrane. The decidua, and other parts of the ovum in the right fallopian tube, are all distinctly seen in the preparation of the uterus and its appendages, which is now in the museum of St. George's Hospital.

On the 18th July, 1836, Mrs. K. ———, after suffering for some time with symptoms of inflammation and retroversion of the uterus, was seized with great faintness, and soon expired. A large quantity of fluid blood was found in the abdominal cavity, and the right Fallopian tube, which contained an ovum of ten or twelve weeks, was extensively lacerated near the fimbriated extremity. On removing the uterus and its appendages from the body, and carefully examining the ovum contained in the right fallopian tube, it was evident that a deciduous membrane every where surrounded the chorion, and adhered to the inner surface of the tube. The placenta, which was situated at the extremity of the ovum nearest the uterus, was seen covered with the decidua, and coagula of the fibrin of the blood were traced from the interstices of the placenta through the decidua into veins in the thickened muscular coat of the tube. At the part where the placenta was situated, the muscular coat of the tube was a quarter of an inch in thickness, and could readily be separated into layers like the muscular coat of the gravid uterus. In this coat of the tube, the veins were also readily traced from the inner surface outward, opening obliquely into one another, and enlarging as they reached a great vein near the uterus.

The interstices of the villousities of the chorion, filled partially with clots of fibrin, were seen around the whole ovum, and presented nothing different in their appearance from those of ova which have been developed within the uterus.

Between the chorion and amnion, near the placenta, was seen the vesicula umbilicalis, with its slender peduncle, proceeding to the umbilical cord.

The appearance of the amnion, cord, and embryo, was perfectly natural.

The uterus was considerably enlarged, and its inner surface was coated with a very thick layer of a yellowish-white soft substance, like common adipose matter, and bearing no resemblance to deciduous membrane. There was no trace of any arterial or venous canal in this coating. The orifice and neck of the uterus were closed with the usual viscid substance, formed by the Nabothian glands.

There was a corpus luteum in each ovary. Both layers of the Graafian vesicle were inclosed within the yellow matter, and this was in immediate con-

tact with the stroma of the ovary.* In the preparation of the parts, the decidua, placenta, chorion, vesicula umbilicalis, amnion, umbilical cord, and embryo, are all distinctly seen, and likewise the layer of the muscular coat of the Fallopian tube, with the veins proceeding from its internal to its external surface. The vesicula umbilicalis has become greatly diminished in size since the parts were immersed in spirit. With the exception of the coagula of blood in the interstices of the placenta, and villi of the chorion, the constituent parts of this ovum are the same as in all cases of intra-uterine gestation, and are in a healthy condition. The preparation of the parts is likewise in the museum of St. George's Hospital.

In the history of a case of Fallopian tube gestation which occurred to M. Chaussier, in 1814, it is stated that the walls of the tube were thin and vascular, that the placenta attached to the inner surface was broad and thin, and that, when detached, the membrana decidua surrounded the ovum. I have met with no case, except this, in which the deciduous membrane is distinctly described as surrounding the ovum in the Fallopian tube; yet I am certain that this must be the fact in all cases of extra-uterine gestation, the circulation of the maternal blood in the ovum being carried on chiefly by the blood-vessels of the deciduous membrane.

Dr. William Hunter examined a case of Fallopian tube gestation, in which the uterus was enlarged, and the membrana decidua was distinctly seen lining the fundus uteri. From this appearance he inferred that the decidua, or outer stratum of the secundines, belongs to the uterus, and not to the ovary, or that part of the conception which is brought from the ovarium.

In all the cases of Fallopian tube conception which have since been recorded, except those of Mr. Langstaff and M. Velpeau, a deciduous membrane has been described as present, lining the cavity of the uterus; and most authors have believed it to be formed in all cases of this description.

"Though the fœtus be extra-uterine," observes Dr. Denman, "the uterus becomes considerably enlarged, and performs its proper office by providing the effluents or deciduous membrane for the reception of the ovum."

"Although it be extremely probable," observes Dr. Baillie, "that the decidua begins to be formed at the time that the ovum passes into the cavity of the uterus, yet it is not absolutely necessary for the formation of the decidua that the ovum should reach that cavity. When an ovum grows in the ovarium or Fallopian tube, the decidua is both formed in the uterus, and the uterus is considerably enlarged, so as to undergo, to a certain degree, changes exactly similar to those which take place in a natural pregnancy."†

Dr. Burns says, "It is curious to observe that invariably the uterus enlarges considerably, and, in every instance, decidua is formed." p. 220.

Meckel, Breschet, Velpeau, and every other author, with whose writings I am acquainted, have given the same opinion on this subject; and not only has this been considered an undoubted fact in all cases of extra-uterine gestation, but, in common pregnancy, it has been supposed that a deciduous membrane is invariably formed within the uterus before the ovum enters its cavity. That the decidua is not formed within the uterus in all cases of extra-uterine gestation, the preparations now described clearly demonstrate. That the uterus is usually enlarged, and its lining membrane coated with a viscid substance re-

* On the 25th February last I examined, with Mr. Wharton Jones, a corpus luteum which was removed from the body of a woman who died in the fourth month of her pregnancy. The yellow matter was here likewise in immediate contact with the stroma of the ovary, and had no capsule around it. Within the yellow matter, and loosely adhering to it, was seen a small whitish cyst, the outer surface of which adhered loosely to the yellow matter. When this cyst was cut open under water, there was seen a very small cavity in the centre. There were two perfectly distinct coats which formed the walls of this little cyst; and these two layers were separated by a less dense structure, apparently cellular membrane, of a bluish or whitish milky appearance. This observation establishes beyond all doubt the correctness of my views respecting the structure of the corpus luteum.

† Anatomical Description of the Gravid Uterus, by W. Hunter, M. D.

sembling the decidua, is certain; but this has not been shewn in any instance to possess an organized vascular structure similar to that of the true decidua. If the fact were established, that the cavity of the uterus always contains a deciduous membrane in cases of extra-uterine gestation, it would not follow that, in ordinary conception, the cavity is lined with a decidua in the form of a shut sac before the descent of the ovum.—*Lond. Med. Gazette*, June, 1840.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

50. *Hydrated Sesquioxide of Iron as an antidote to Arsenious Acid*.—Dr. D. MACKENZIE of Edinburgh relates in a recent No. of the *Lancet* (April 4, 1840), several experiments instituted by him, with a view of ascertaining the efficacy of the above noticed antidote. The results are confirmed by all recent experience, that Dr. Bunsen did not err in ascribing so much value to the use of the hydrated sesquioxide in cases of poisoning with arsenic.

51. *Efficacy of Hydrated Peroxide of Iron as an antidote to Arseniate of Copper*.—Dr. SPAETH, of Esslingen, relates in the *Medicinisches correspondenz blatt*, the case of a boy three years of age, the son of a painter, who poisoned himself by licking a shell covered with Scheele's Green (Arseniate of Copper). Half an hour afterwards he became pale, his countenance changed; the colour of his mouth and lips indicated the poison he had taken. Violent vomiting soon came on, with diarrhoea, pain in the abdomen and burning thirst. The peroxide of iron was given in divided doses in warm water and in half an hour the vomiting, diarrhoea, colic and thirst had ceased, and the next day all the symptoms had disappeared.—*Journ. des Connaissances Med. Chir.* March, 1840.

VITAL STATISTICS.

52. *Influence of Wealth on the fruitfulness of Marriages*.—M. HIPPOLYTE PASSY in a paper recently communicated to the Academy of Moral and Political Science, remarks that in Europe marriages are generally less fruitful in large towns than in small ones, and in these least than in the country. Thus in France, from 1826 to 1836, there were born annually on an average, 904,702 legitimate children; and as the annual average number of marriages was 266,947, it follows that there have been produced by each marriage, rather more than 3.52 children. In those towns of France which contain 20,000 inhabitants and upwards, and which are 39 in number, there is a total population of 2,634,532 persons, among whom, from 1826 to 1836 there have been on an average 62,290 legitimate births per annum, and 21,374 marriages, which numbers give 3.05 children for each marriage. This number is less than the general average number for the whole of France by 0.47, and less than the corresponding number for towns with population under 20,000 by 0.51. This difference is believed to depend, in some of the large towns, on the composition of their population; the numbers being by no means the same for each. Those that possess the greatest number of wealthy families are found to be the least productive, while those that are filled with a manufacturing or maritime population attain in this respect, higher numbers.

The results presented by the city of Paris, are very conclusive on this point; the fecundity of marriages in each arrondissement, being found to vary in almost exactly the reverse ratio of the wealth of each of these districts. Thus the most opulent arrondissement, the 2nd, does not give 2 children for each marriage; whereas the poorest, the 13th, gives 3.24.

This view is to a certain extent borne out by historical facts. The ancient families of Greece, and more especially of Rome, were always complained of

as rapidly becoming extinct. In some modern countries, the noblesse of the second order is kept up only by the multiplication of letters patent of creation. Thus, in some of the provinces of Holland, there does not exist a single family of those formerly inscribed on the registers of the equestrian order. At Berne, at the end of the last century, there remained only one half of the noble families who attained a permanent seat in the councils of the state during the 16th century. Almost all the great historical families in all countries have become extinct.

In England, it appears from two papers by Jno. T. R. Edmonds published in the *Lancet* (10th Feb. 1838 and 9th March 1839), that in the year 1834, there were only 74 titles in the English peerage which had endured more than four generations, or more than 133 years; and of these only 13 had descended in a direct line for as many as six generations. Of this small number two (Huntly and Essex) have since passed into collateral branches by the death of their holders, and three others will most probably do so upon the decease of the present peers. On comparing the mortality among the ancient peerages with that among the more modern, it was found that at ages under 40, the mortality of the total occupants of the ancient titles is considerably greater than that of the occupants of modern titles. Some improvement, however, has taken place in this respect during the last century, as the mortality of occupants of ancient titles during the last four generations have been less than that of their predecessors. —*Quarterly Journal of the Statistical Society of London*, Jan. 1840.

53. *Excess of male births among the Jews.*—In Hamburg the whole number of living births from 1826 to 1837 inclusive, among Christians were boys 52,590, and girls 24,197, being in the proportion of 100 to 105.76. In the same city and during the same period the living births among the Jews were boys 1359, girls 1190, being a proportion of 100 to 114.81.

In Prussia on an average of fifteen years from 1820 to 1834, the proportion of female to male births among the whole population, including Jews was 100: 105.97, and among the Jews alone 100: 111.21.—*Ibid.* July, 1839.

54. *Mortality of Small-Pox after Vaccination.*—According to Dr. Heim, there occurred in Wirtemberg between the years 1831 and 1836, 1055 cases of small pox after vaccination, of which 75 proved fatal, being at the rate of 7 per cent. Dr. Gregory states that there were admitted into the Small pox Hospital of London between 1835 and 1839, 748 cases of small pox after vaccination, of which 53 proved fatal, being the exact same rate of 7 per cent. This can hardly be an accidental occurrence, the number being too large to admit of such a supposition.—*London Medical Gazette*, June 26, 1840.

ANIMAL CHEMISTRY.

55. *Medico-Chemical history of Milk.* By Dr. G. BIRD.—Milk is a white opaque fluid, possessing a bland, sweetish taste, secreted by certain glands in Mammalia, and designed for the nourishment of their offspring.

The specific gravity of cow's milk, which may be assumed as the type of the different varieties of this secretion, is about 1.030. This, it is obvious, is far from being constant, as it must necessarily vary with the amount of solid matters present, and which depend upon the health, vigour, age and nourishment of the animal, as well as on the time that has elapsed since parturition, and other causes.

Under the microscope, myriads of extremely minute globules are seen floating in milk; these, on account of their extreme minuteness, appear black at their edges, and with a magnifying power of 100, the largest of them does not exceed in diameter, according to Raspail, .00039 inches. On the addition of a drop of solution of potass, the globules are seen to vanish, and a limpid fluid is left.

As the opacity of milk depends on its holding in diffusion myriads of opaque globules, Sir A. Cooper has, by straining it repeatedly through a filter sufficiently fine, separated the opaque particles. On submitting this to the test of experiment, I have also found it to succeed most perfectly, a nearly limpid fluid resulting after the milk had been repeatedly filtered.

The simplest mode of regarding milk is that of an emulsion, formed by the intimate mixture of a fatty matter termed *butter*, with an albuminous constituent, called in chemical language, *casein*. The intimacy of the mixture is doubtless increased by the presence of sugar of milk, as saccharine substances are well known to possess the property of forming imperfect emulsions with oils.

Cow's milk contains on an average about 10 or 11 per cent. of solid matter, made up of organic and saline constituents.

When milk is permitted to repose for a few hours a large proportion of its oily constituents, mixed with some of its caseous matter, slowly separates from the mass of fluid, and being of lower specific gravity than the latter, rises and forms an opaque layer on its surface. This lighter portion is termed *cream*, and the milk from which it is thus separated is popularly termed *skimmed milk*, because the cream is skimmed off, for the purpose of being converted into butter. The specific gravity of the cream is on an average 1.0244, and that of skimmed milk, 1.0348, the greater gravity of the latter affording a sufficient explanation of the phenomenon of the cream floating on its surface.

If the milk from which the cream has been thus separated, be left to itself, it sooner or later undergoes a spontaneous change, some free lactic acid becoming developed, and the albuminous constituent, *casein*, separates in large white coagula. The development of lactic acid, in all probability, arising from the reaction of caseous matter on the saccholactin, or sugar of milk, as lately pointed out by M. Fremy. This always takes place with greater rapidity in warm than in cold weather, and is hastened during an electric state of the atmosphere, as during a tempest. The addition of a small quantity of any free acid, or of the well known *rennet*, greatly facilitates this change and consequently coagulation of the caseous matter. The serous fluid from which the *casein* or *curd* has been thus separated, is popularly termed *whey*.

When whey is submitted to evaporation so as to free it from a large proportion of water, it on cooling crystallizes in small brownish grains; constituting sugar of milk. In Switzerland a very large quantity of this sugar is procured from the whey left after separating the curd in the process of cheese making, and is used by the peasants for all the purposes to which cane sugar is applied in this country.

Sugar of milk consists of —

Carbon	45.94
Hydrogen	6.00
Oxygen	48.06

100 00

It is generally stated to be incapable of undergoing the vinous fermentation, although an alcoholic fluid termed *koumiss*, has been long prepared by the Tartars from mare's milk. It is now, however, placed by the researches of Hess, (Poggendorff, *Annalen* 21., 194,) beyond a doubt, that sugar of milk is capable of being converted into alcohol by fermentation, although not with so much readiness as cane or grape-sugar.

A layer of cream formed on the surface of milk by repose is by no means homogeneous, for on carefully examining it, two distinct portions, not, however, separated by any very evident line of demarcation, may be made out; of these the uppermost is richest in butter, and the lowest in caseous matter. The average proportion of cream separated from milk by repose is about one-eighth, but this varies considerably.

When cream is submitted to mechanical agitation, as in a churn, it separates into two portions, the one being a soft fatty substance of an agreeable odour, constituting the well known butter; the other is a more serous fluid, holding some casein, some sugar, and saline matters in solution, and termed butter-milk,

the *petit-lait* of the French. Butter generally contains about one-sixth of its weight of caseous and other matters mechanically mixed with it; these by careful fusion become separated, and then the butter may be kept for a long time without becoming rancid.

After butter has been carefully fused, filtered through paper whilst melted, and well washed with water, it is nearly pure; in this state, 100 parts of hot alcohol dissolve 3.46 parts of it. Butter thus purified, contains, like all other fats, *oleine* and *stearine*, with the addition of a third fatty ingredient peculiar to butter, and hence named *butyryne*.

Anything like a quantitative analysis of milk can, it is obvious, be considered in no other light than that of affording an approximation to the average proportion of its principal ingredients. The following are the results of the analysis of Berzelius.

1000 parts of *skimmed milk*, of specific gravity 1.033, contained —

Water	928.75
Caseous matter with traces of butter	28.00
Sugar of milk (sacchrolactin)	35.00
Lactic (acetic) acid, acetate of potass, and traces of a salt of iron	6.00
Hydrochlorate and phosphate of potass	1.95
Phosphate of iron	00.5
1000 parts of <i>cream</i> , of specific gravity 1.024, consisted of	
Butter	45
Caseous matter	36
Sugar of milk and saline ingredients	44
Water (<i>butter-milk</i> ?)	870

By incineration, caseous matter leaves above 6.5 per cent. of ashes, consisting chiefly of phosphate of lime.

The caseous matter, or casein of milk, constitutes the basis of cheese: it may be considered as bearing the same relation to milk, that the albumen does to blood.

It is, indeed more than probable, that casein is but a modification of ordinary albumen, and hence may, in a physiological sense, be considered as the albuminous principle of milk. Casein is precipitated from its solutions as in milk, by the addition of acids, which indeed appear to combine with it, for by separating them by a very simple chemical process from the coagula, the casein once more becomes soluble in water. A familiar example of the coagulation of casein by an acid is met with, in the vomiting of curdled milk by suckling infants; the coagulating agent in these cases, is probably hydrochloric acid, which, from the researches of Dr. Prout and Leopold Gmelin, appears to be constantly present in the stomach. The rationale of the disappearance of this disagreeable symptom, on the administration of a few grains of chalk or magnesia, is hence sufficiently obvious.

Casein, when rendered as pure as possible, consists, according to the analyses of Gay Lussac and Thenard, and Berard, of—

	Carbon.	Oxygen.	Hydrogen.	Nitrogen.
Gay-Lussac and Thenard	59.78	11.41	7.43	21.38
Berard	60.07	11.41	6.99	21.51

Damp casein, when set aside in a warm place, rapidly undergoes putrefactive fermentation, and a complex mass results, consisting, according to Prout, of two substances, termed caseic acid and caseous oxide, or according to Braconnot, chiefly of a matter termed aposepodine.

Milk drawn shortly after parturition, differs in its physical and chemical character from milk drawn at a more distant period. This variety is termed *colostrum*; that of the cow is yellow, mucilaginous, and occasionally mixed with blood; it contains but mere traces of butter or other fat, and appears to contain albumen as one of its ingredients, as by exposure to heat, it completely solidifies, like so much serum of blood. The specific gravity of the *colostrum* of the cow is about 1.072. This secretion does not turn sour like milk, but

readily putrefies; and in three or four days after the birth of the calf, is replaced by the ordinary lacteal secretion.

The colostrum of the cow, ass, and goat, has been submitted to examination very lately by MM. Chevalier and Henry. They state the property possessed by this secretion of undergoing coagulation by heat, although they have not mentioned albumen among its ingredients. It is probable that it was confounded with the mucous matter, stated by these gentlemen to be present in the fluid. The following is the result of their analysis of the colostrum of the cow:—

Casein	15.07
Mucous matter	2.00
Saccholaetin, or sugar of milk	?
Butter	2.60
Water	80.33
	<hr/>
	100.00

On taking a retrospective glance at the above remarks on the composition of cow's milk, which I have taken as a standard or type of this class of secretions, we can not help being struck with the peculiar manner in which the different component parts appear to be arranged, for the more ready nourishment of the new-born animal. Milk may be physiologically regarded as made up of three classes of ingredients, the first containing those which resemble vegetable secretions in the absence of nitrogen; the second including those which contain abundance of nitrogen, and consequently afford a proper pabulum for the growth of the young animal; the third class containing those ingredients which in the present state of chemical physiology we have no safe grounds for supposing are *digested*, or their elements re-arranged by vital chemistry, and hence differ from the first two classes in being rather *appropriated* by the vital influence of the infant animal, than assimilated to form such combinations.

A. *Ingredients of milk in which nitrogen is absent.* Sugar of milk, fatty matters.

B. *Ingredients of milk in which nitrogen is present.* Caseous matter.

C. *Inorganic, or saline ingredients.* Salts of potass, soda, lime, and iron.

The latter class contains those earthy salts which constitute the chief ingredients in osseous structures; and all being dissolved in, or diffused through, abundance of water, become fitted to pass or drain through the minutest vascular tissues.—*London Medical Gazette*, April, 1840, from Sir A. Cooper's *Work on the Mamma*.

56. *Observations on the existence of certain elements of the Milk in the urine during utero-gestation; and on the application of this fact to the diagnosis of Pregnancy.*—The No. of *Guy's Hospital Reports*, for April last, contains an account of some interesting investigations by Dr. GOLDING BIRD relative to the *Kiestein*, a newly discovered constituent of the renal secretion, existing in the urine of the human female, during utero-gestation. (See No. of this Journal, for Feb. 1840, p. 483.)

Dr. Bird first submitted to examination the urine of a married woman in the sixth month of pregnancy, and after four days exposure the urine became covered with the peculiar fat-like serum. To ascertain next whether such appearances were constant in the urine in every case of utero-gestation, Dr. B. obtained specimens from about thirty women, under his care in the Finsbury Dispensary, in the third to the last month of pregnancy, and in every case, with but three exceptions, copious fat-like pellicles were observed after two or three days exposure.

Whilst collecting these specimens of the urine of pregnant women, Dr. B. directed several young women who presented themselves to be treated for amenorrhœa at the Dispensary, to bring specimens of their urine, which were exposed simultaneous with those furnished by the pregnant women; and in two instances only, was any evidence of the presence of the peculiar matter mani-

tested. In one Dr. B. strongly suspected pregnancy from the appearance of the areola around the nipple, but she was so much annoyed at being questioned on this point, that she left the Dispensary and he could not verify his suspicions. The second case was that of an unmarried servant, who came under Dr. B's care Nov. 7th, 1839, suffering from cough, apparently depending upon deranged digestive functions, and relaxed uvula: she had not menstruated since last May, and attributed the disappearance of the catamenia to exposure to cold. "She had morning sickness, and the veins of her lower extremities were varicose. On examining the abdomen, no evident enlargement of the uterus could be observed, in consequence of the parietes being loaded with fat; and on looking at the breasts, the nipples were found surrounded by a large purplish-brown areola. On being charged with pregnancy, she obstinately denied it: but admitted having become the mother of an illegitimate child eleven years previously. She declared that she had preserved absolute chastity since that period, and wept bitterly at my (as she termed them) unjust suspicions. I procured a specimen of her urine, and exposed it in a lightly-covered glass cylinder: in two days, a dense pellicle of fat-like matter formed on its surface: this increased in thickness during three days, and then evolved so powerful an odour of putrefying cheese, that I was obliged to throw it away. On telling my patient that I was convinced of her pregnancy, and declining to prescribe any remedy to restore menstruation, she left the Dispensary; and I lost sight of her until January 15th, when she again saw me, and requested my interest to procure her admission into a Lying-in Institution; she was evidently then within a month of her confinement."

Dr. B's investigations into the nature of the Kiestein led him to infer that the greasy aspect of the pellicle, arises not from the presence of fat, but from numerous crystals of triple phosphate, which, from their brilliancy, produce this glistening appearance. With regard to the nature of the animal matter mixed with these crystals it is difficult, Dr. B. observes, in the present state of physiological chemistry, to give a positive opinion. "It is not" says Dr. B., "mere albumen or casein, although much closer allied to the latter than to any other product of organisation I am acquainted with, especially when we connect with its chemical character, the powerful cheese-like odour so frequently evolved, during its development in the urine, in the form of a pellicle."

Dr. B. thinks that there is sufficient evidence of the presence of certain ingredients of the milk, as caseous matter, and abundance of earthy phosphates, in the urine of pregnant women; he therefore suggests as a probable explanation, that during utero-gestation "certain ingredients of the milk are eliminated from the blood by the mammary glands, and, as is very well known, often accumulated in the breasts, in sufficient abundance, to escape from the nipple on pressing it between the fingers. This imperfectly-formed secretion, not having a ready exit by the mamme, is taken up into the circulating mass, is separated by the kidneys, and eventually, escapes from the body in the urine."

Dr. B. notices a curious circumstance somewhat in corroboration of these views, in the exceptions to the presence of the ingredients of milk in the urine, already alluded to. One of these cases which Dr. B. relates is as follows.

"Jane Francis, aged 30, in the eighth month of pregnancy, came under my care, among the out-patients of Guy's Hospital, in the beginning of October, 1839, for hæmorrhoids. A portion of the urine voided early in the morning, after two day's repose, became covered with the ordinary pellicle. I desired her to bring me another specimen in a few weeks, wishing to examine it near the end of utero-gestation. On October 25th, she again presented herself, labouring under a severe cold: her skin was hot and dry, and her urine scanty, high-coloured, and contained a copious deposit of lithate of ammonia. By repose, during several days, not the slightest appearance of the peculiar pellicle could be detected. On the functions of the skin becoming restored by the administration of antimonial diaphoretica, the lithate of ammonia disappeared, and

* This woman has since been delivered of a male child.

the ordinary phenomena characteristic of pregnancy, appeared in the urine; so that it appeared, that on the onset of slight inflammatory fever accompanying the cold, the ordinary secretions became arrested, and with these the caseous pellicle vanished: immediately, however, that diaphoresis was produced, and the kidneys had ceased to perform a compensating function for the skin by carrying off nitrogen from the system in the form of lithate of ammonia, they commenced eliminating the imperfectly-formed elements of milk from the blood in the ordinary manner."

Dr. B. has never seen in the renal secretion of nurses, the pellicles which he assumes to be characteristic of the presence of certain elements of milk in the urine, and this he thinks justifies the idea, that, whilst suckling, the milk being got rid of almost as quickly as it is secreted, none of its elements find their way into the urine; but as soon as the milk ceases to be removed in this way, and indications of it are to be met with in the urine, providing pregnancy exists.

Dr. B. was consulted by a woman in the third month of utero-gestation, about her son 16 months old, whom she was suckling. This child was evidently dying. Dr. B. examined the mother's urine collected before the death of her child the day after, and again a week after this event. The first underwent no particular change; the second after two days repose had a thin caseous pellicle on its surface, and the third, in three days became covered with a complete creamy layer, evolving a strong cheese-like odour.

The following case is also related by Dr. B. "Emma Cox, aged 24, suckling her first child, five months' old, admitted under my care at the Finsbury Dispensary, in December 1839, complaining of symptoms generally referrible to *asthenia lactantium*. She was a tall, thin, delicate-looking woman, and had lost a mother and some collateral relations from consumption: she had little or no cough: on examining her chest, I detected tubercular deposit at the apices of both lungs, with evidence of commencing softening on the left side: her urine was pale, and free from any appearance of caseous pellicle. I desired her to wean her infant; but this she did not do until January 27th, 1840. When she sent her child away, her breasts became painful and hard. She was compelled to have them drawn; and in a week they became flaccid, and the secretion of milk stopped. On January 30th, the breasts being still turgid, and three days after the cessation of suckling, some of her urine was collected, and exposed in a glass cylinder: in the course of four days, a cream-like pellicle, evolving a cheese-like odour, was observed: on collecting some of it on a slip of glass, and examining it under the microscope, it was found to resemble the usual pellicle which forms, by repose, on the urine of pregnant women, in every respect, except in the extreme paucity of the crystals of triple phosphate; the entire portion of the pellicle examined, being nearly entirely composed of the animal matter, insoluble in acetic acid."

Dr. B. has several times examined the urine of women shortly after their confinement and hitherto has not succeeded in detecting any indications of the presence of milk in that secretion.

In conclusion Dr. B. offers the following deductions as sufficiently supported by his observations.

"1. That certain organic matters, closely resembling, if not identical with, caseous matter mixed with abundance of the earthy phosphates in a crystallized state, are eliminated from the blood during pregnancy; and, if not otherwise removed, are taken up, and finally thrown out of the system, by the kidneys.

"2. That certain accidental circumstances, especially connected with those morbid actions in which the kidney is called upon to perform a compensating function for the skin, as indicated by the abundance of azotized matter in the form of amorphous lithate of ammonia in the urine, interfere temporarily with the development of caseous matter, as they do in checking the cutaneous and other secretions.

"3. That, taken in connection with other symptoms, as the formation of a dark areola around the nipple, and cessation of menstruation, or abdominal enlargement, the formation of a caseous pellicle in the urine affords a very valuable corroborative indication of the existence of pregnancy."

MISCELLANEOUS.

57. *Medical Instruction in France.*—The *Gazette Medicale de Paris* of Nov. 16th, 1839, contains an interesting report from ORFILA to the minister of public instruction. It appears from this report that the number of medical students in France has greatly decreased within the last few years. In 1835 the number who commenced the study of medicine was 1522, whilst in 1837 it was but 744 and in 1838–39 only 596. M. Orfila ascribes this diminution to the ordinance of the 9th August, 1836, which requires a young man to be a bachelor of letters, before being admitted a student of medicine, and to be a bachelor of sciences before receiving his fifth inscription; also to the greater severity of the examinations; and finally to the too great number of practitioners admitted into the profession during the last ten years.

We extract the following statistics of examinations in the three medical faculties of France, during the scholaire year 1838–9.

Medical Faculty of Paris.

	No. of pupils examined.	No. of pupils rejected.
1st, Examination (accessory sciences.)	273	63 or 1 in 4½
2 do	249	75 or 1 in 7½
3 do	558	92 or 1 in 6
4th do	450	46 or 1 in 10
5th do	471	47 or 1 in 10
Making a total of 2301 students examined, of whom 323 were rejected or 1 in 7.		
Of 455 theses, 26 were rejected.		

Faculty of Montpellier.

	No. of pupils examined.	No. of pupils rejected.
1st Examination	78	6 or 1 in 12½
2 do	176	20 or 1 in 9 about
3 do	171	4 or 1 in 43
4 do	178	7 or 1 in 25½
5 do	167	0
Making a total of 771 students examined, of whom 37 were rejected or 1 in 21.		
Of 171 theses, 9 were rejected.		

Faculty of Strasburgh.

	No. of pupils examined.	No. of pupils rejected.
1st Examination	27	5 or 1 in 5½
2 do	48	1 or 1 in 48
3 do	24	0
4 do	25	0
4 do	28	2 or 1 in 13
Making a total of 152 students examined of whom 8 were rejected or 1 in 23. 23 theses were sustained and all the candidates were admitted.		

The whole number of graduates during the year in France was thus 614; but M. Orfila estimates that the number next year and in subsequent years will not be more than 200 or 250.

58. *Number of Physicians in France.*—There are at present in Paris, 1,310 doctors of medicine and 200 officers of health, making 1,510 persons exercising the healing art. The population of the capital is 900,000 giving one physician to every 596 inhabitants. In the provinces there are but one physician to every 1,800 inhabitants.—*Bulletin Générale de Thérapeutique.*

AMERICAN INTELLIGENCE.

Case of Small-pox Contagion apparently conveyed by a Letter. By WASHINGTON L. ATLEE, M. D., of Lancaster, Pa.

I herewith forward to you an account of a singular instance of small-pox contagion, which, in several points of view, may be interesting to the profession.

Mr. Robert Atkinson of Lancaster, Pa., was taken sick on the 8th of December, 1839, with the eruptive fever of small-pox. He passed through the distinct variety of genuine variola under the care of my brother, Dr. John L. Atlee, without any very unfavourable symptoms. The attack was of a violent grade, and the skin was completely covered by the eruption. On the 18th of the same month the pustules began to dry, and on the 22d he was able to be out of bed. By the 29th the scabs had all scaled off, leaving a few scurfy exfoliations upon the hands and head. On this day he wrote a letter to his brother Richard Atkinson, in Wellsville, Columbiana County, Ohio, giving him an account of his recent illness and of other domestic afflictions. This letter was written on glazed writing paper, and sealed with a wafer moistened by his own saliva. Being detained on the road by the great snows which fell about that time, it did not reach Wellsville until between two and three weeks after it was written. After receiving the letter, Richard Atkinson tore open the wafer, and carried the letter in his vest pocket for several days. He wrote an answer to it on the 15th of January, 1840, and during this time had the letter, which he had received, lying before him and under the sheet on which he was writing. He wrote another letter to a friend on the 9th of February, and on the 12th he walked twelve miles on business, and on Monday the 17th, he took sick with the prominent symptoms of small-pox. The disease proved to be of the confluent character, and terminated fatally on the 1st of March.

Mr. Atkinson of Ohio had a sore on one of the fingers of his right hand, and one upon his breast. These sores first took on the appearance of variola, before the surface generally became affected.

An old man, who had assisted in putting the body into the coffin, went afterwards to a neighbouring tavern, and, before having washed his hands, shook hands with a young man, who, without any other known cause of contagion, took the confluent small-pox and died about the 25th of March. The small-pox and varioloid now spread through that neighbourhood.

There had been no cases of variola at Wellsville or near it for two years before, and no other cause for its introduction could be ascertained than the letter from Pennsylvania.

Both the Messrs. Atkinson had been vaccinated about twenty years before in England, neither of whom took the vaccine disease.

The above statement was made to me by Mr. Atkinson of Lancaster, who went to Wellsville after the death of his brother, and ascertained

these facts. As he is a gentleman of the strictest veracity, the statement can be relied on. Should there be any error in it, it is hoped that the physicians there will correct it.

Several questions naturally suggest themselves arising out of this interesting case. How did this letter communicate this disease? Can the furfuraceous sequela of variola produce small-pox by inoculation, or in any other way? Could the disease have been communicated by any loose scurf folded up in the letter? Or by any taken up from the fingers by the wet wafer? Could the saliva with which the wafer was moistened have contained contagion? Could the paper have imbibed it from the hand of the writer? Or Could it have imbibed it from the air of the room when it was saturated with the effluvium? Could the ink have absorbed it as fluids do certain gases? Would the diseased have been likely to have received the contagion had the skin of the hand been unbroken, or had he not carried the letter about his person? Can letters or packages taken out of a variolous atmosphere, infect districts through which they pass? Is our present quarantine calculated to prevent similar results? These and other questions may arise out of the above case, but I will leave others to pursue them.

Case of Mollities Ossium. By J. W. TENNEY, M. D., of Webster, Mass.—Mrs. D'W—, ætat. 43, was the mother of five children. Her health had been but indifferent for the last fifteen months. She complained of general weakness and especially in her lower limbs, emaciation, very copious discharges of urine depositing an abundant light-colored sediment. She had experienced some colic pains and in walking, her gait was rolling, bringing the centre of gravity at each step directly over the limb on which the weight of the body was thrown. Her menstrual periods had ceased for about eighteen months. The origin of her disorder she had always supposed to have been exposure to a cold atmosphere and standing in snow in thin shoes after fatigue and profuse perspiration. After that period, hitting the foot in walking against the slightest impediment was sufficient to throw her down.

In November last being troubled with neuralgic pains about the face and jaw, and supposing they might proceed from a decayed tooth in the under jaw, she requested that it might be extracted; but on attempting to raise the tooth with forceps, it was found necessary to desist and use rollers as the bone seemed to bend though but slight force was used. A few days after it was found so difficult to extract the last tooth on the right side from the want of firmness in the bone and tension in the muscles that it was left in the socket. From this time the muscular strength of the patient failed fast, though her appetite remained tolerably good, and her stomach generally retained and digested her food, though it occasionally rejected all nourishment for a day or two. She became at length unable to support her weight or raise herself from the bed to which she was soon confined.

In the latter part of March, her thigh bone was found flexed, at about a right angle near the centre. The patient was not sensible of it till it was accidentally discovered and supposed to be broken; but upon bringing it into its natural position, no crepitation was perceived, and the extreme emaciation of the limb enabled us to satisfy ourselves that instead of being broken the limb was bent. The other limbs, on examination also were

found in the same condition, especially the long bones which had so far lost their firmness as to be perceptibly flexed from their position, which they would recover again by their elasticity. The disease still continued its progress and the firmness of the bones diminishing till June 9th, when she expired. During this time the mental faculties remained bright, with an unusually rapid flow of ideas, voice strong, pain not severe.

Autopsy 26 hours after death. Corpse perfectly flexible, emaciation extreme, œdema of the lower limbs and right arm which had supervened during the last two or three days, fulness and hardness of the abdomen, thighs evidently shortened. On cutting down upon the left femur where the alteration of structure had first showed itself, no fracture was found, but the bone had doubled over on itself in such a manner, that without altering the general direction of the limb, it had shortened it about two inches.

About two inches below the lesser trochanter the bone formed a right angle by bending inward, producing a prominence which might have been mistaken for the greater trochanter while the limb was covered by the integuments. The neck of the bone was also bent, approximating the head of the bone to the greater trochanter. The bone was so soft in every part as to be easily pierced by a scalpel. The cartilage covering the articulating surface was in its natural state, but much harder than the bone. On laying open the medullary cavity, the medulla was found disorganized, very much resembling coagulated blood. This cavity was much larger than common and the osseous substance much diminished. It was so thin and devoid of earthy matter as to be easily compressed by the fingers so as almost to obliterate the internal cavity. The external surface of the bone was less diseased, the osseous matter remaining, being principally upon the outside. This bone was entirely detached and preserved. The bones in the other parts of the body were examined and found more or less in the same condition. The right humerus and right femur seemed equally flexible and had not retained their shape; the bone of the legs and forearms though retaining their shape could evidently be bent considerably and recover their position, though if the strain was carried beyond a certain point the texture was broken and it would not recover its position, though a perfect fracture would not take place. The phalanges of the fingers, the tarsal bones, the bones of the pelvis, the cranium could all be pierced by a scalpel. The bones of the spine were so soft that the vertebræ could be cut into or their processes cut off with more facility than if they had been cartilage. The ribs of the right side had doubled over upon themselves, in a manner similar to the femur, so as to shorten them about an inch and a half and materially diminish the capacity of that side of the thorax. The muscular texture of the body was materially altered; it was pale, flabby and so destitute of fibrine that it could be easily torn, even the tendinous portions of the muscles possessed little more strength than the loose cellular tissues of the body. This appearance in a more or less degree existed through the whole muscular tissue. The heart for instance was flabby and could be easily cut with the finger nails especially the right side. The uterus was in the same state though not to the same degree. The nerves retained their natural form, hardness and strength. The brain was not examined as no symptoms during life indicated any disease of that organ. The lungs were healthy, though the common observation that they were softer than natural might be applied to all the internal organs. The

omentum had a dirty appearance and a rough gritty feel. Coats of the stomach healthy, kidneys healthy.

Case of Poisoning with Opium. By A. B. Shipman, M. D. of Cortlandville, New York.—Major Herrick, ætat. 80, a revolutionary soldier, took through mistake a wine glassful of laudanum at 5 o'clock in the morning of the 15th of February, 1838. He was in bed at the time and a domestic in the family brought it to him supposing it to be tincture of aloes. Soon after taking it he arose, went to the barn, staid about half an hour, returned feeling "very strangely" as he expressed it, and immediately threw himself upon the bed. As it was customary for him when unwell to sleep in the morning the family were not alarmed until about 10 o'clock, when on attempting to wake him he was found insensible: I saw him at 12; at that time he was in a profound stupor, pulse slow and feeble; stertorous breathing; cold extremities, and unable to swallow. On finding the mistake, at 10 o'clock, they had given him some vinegar, which he swallowed with some difficulty, but soon became incapable of swallowing any thing else. I carried my stomach pump with me, and on arriving at the place (a distance of three miles from my residence,) I ordered a strong infusion of coffee to be immediately prepared while several assistants placed the patient in an arm chair. I introduced the tube and injected a quart of warm water into the stomach, and quickly pumped it out again; and repeated this several times while the coffee was preparing; there was but little of the smell of opium from the water returned from the stomach. I next threw in a quart of strong coffee and let it remain half an hour when it was withdrawn and the same quantity injected again; this process was repeated half a dozen times, when a strong infusion of tea was substituted for the coffee and suffered to remain; and the stomach tube was withdrawn. Respiration was now nearly suspended, and the pulse not to be felt at the wrist; the lower jaw was fallen; the mouth wide open, and a cold clammy perspiration covered his body.

I ordered him to be placed in bed, and brisk frictions used with hot bricks to his feet, sinapisms of mustard to his wrists and ankles, cold water poured upon the top of his head; and after a perseverance of this course of an hour, he began to show some signs of returning sensibility; he would move his eye-brows, and flinch when scratched upon the soles of his feet. About 7 o'clock, he was seized with strong convulsions, which affected the muscles of the trunk and extremities, to such a degree as to make him as stiff as a frozen corpse; these spasms would continue from ten to fifteen minutes at a time, and then partially relax for two or three minutes, recurring several times, and finally at about half past 8, ceased altogether, a warm perspiration breaking out over the body. The pulse began to be felt distinctly; the breathing more natural; a spoonful of tea poured into his mouth excited coughing, and the patient for the first time opened his eyes with a wild and vacant stare; the experiment of pouring a teaspoonful of liquid into his throat was followed by coughing and strangling which had the effect to rouse him most effectually; and he was able to sit up in bed and converse by 9 o'clock, P. M. and remained awake the remainder of the night.

The next day he was able to walk about his room and quickly recovered his health and strength, and is, at this time, as well as he has been for many years.

The coffee and tea in this case I think were the means of saving his life, and without the use of the stomach pump they could not have been introduced into the stomach.*

Observations on Facial Neuralgia. By G. B. FUNDENBERG, Dentist, Pittsburg.—Although I am not prepared to assert that all instances of facial neuralgia, are referable to organic lesion, I have no hesitation in saying that at least two-thirds of them are caused by pressure or other local irritation of the nerve; and that a large majority of the cases, believed to be constitutional, and treated accordingly, will be found, on dissection or other evidence, to proceed from the above mentioned causes. It is true this local irritation will often be beyond the reach of surgical assistance. Yet, it is of some importance for correct views of the disease to be entertained, so that the medicines usually given under the supposition of its constitutional origin, may be regarded rather as palliative than curative.

There are, however, many cases, whose local causes are within the reach of surgical aid, and it is in these that the importance of correct views is most obvious; for without a reference to the possible existence of such a cause, medicines may be given for years, which at best can only serve as palliatives, when perhaps the disease might be cured by the simple operation of opening an obturated foramen, or by the yet more simple extraction of a tooth. The following cases selected from many of frequent occurrence, will serve to show that the above views are not entirely theoretical.

Case I. In the year 1838, Mr. N——, a gentleman of Pittsburg, called on Dr. S. P. Hullihen of Wheeling, with whom I was then engaged in business. Mr. C. stated that he had been afflicted with tic douloureux for the last fourteen years; that the pain during that time, had been gradually increasing in intensity and frequency; that he had consulted many physicians, but had received little or no benefit. He described the pain as being of a severe and excruciating character, occurring at irregular intervals, darting along the course of the facial nerves, through his upper and lower lip, his temple, forehead, scalp and lower jaw. When asked if there was any particular spot to which he could refer the pain, he placed his finger on the lower jaw, exactly over the anterior maxillary foramen, and replied, that the pain predominated there, and that it often appeared to him as though that were the centre from which it radiated. There was a scar on this spot, which had been caused by the breaking of an alveolar abscess externally.

Here then was sufficient indication to warrant an operation. Dr. H. at least was satisfied. He made an incision an inch in length down to the bone, and having ascertained that the foramen was closed to such a degree as to prevent the introduction of a fine probe, he proceeded to open it with a drill made for the purpose. The usual dressings were applied, and the patient has not had a symptom of the pain since.

Case II. A lady, ætat. 40, called on me at Louisville, complaining of a pain in her face, head, neck, arms and hands. She felt at irregular intervals a darting pain along the courses of the different branches of the fifth pair of nerves, which extended down her neck and shoulder, along

* The agency of the cold water douche to the head in the cure of this case appears to us to be undervalued by our correspondent. It is among our most efficient remedies for narcotism.—Ed.

her arms, to the extremities of her fingers. The pain was so severe as to compel her to cry out, and so frequent, as to allow her but little rest day or night. A harsh noise, such as the creaking of a door or the filing of a saw, often brought on a paroxysm. When eating she was most frequently attacked with it.

Suspecting the cause from this last circumstance, I examined her teeth. They were all sound, but upon slightly tapping a superior bicuspid, the patient suddenly screamed out. I extracted the tooth with considerable difficulty and found a large exostosis on the end of the fang, which was nearly as large as the body of the tooth.

The lady came to me three days afterwards, and declared herself cured.

Case III. A young lady, *ætat.* 17, complained of a pain in her arms, breast, side and face. She had about two years before, experienced a very singular pain on the side of her head, accompanied with a darting pain in the lower jaw. This pain gradually extended down her neck to her left side as far down as the short ribs, and also to her arms as far as the elbows. She described the pain as producing a sensation as if needles were stuck into the parts, and like lightning extended along the course of the nerves. The pains did not occur at regular intervals. Warm water taken into the mouth aggravated and frequently caused a paroxysm. Cold water sometimes relieved her. When eating she was often forced to cry out with the sudden pain. She had consulted a physician of some celebrity, who had pronounced the disease *tic douloureux*, and treated it with tonics.

I looked into her mouth and examined such of her teeth as were decayed, but could discover nothing. At length upon tapping with an instrument upon an inferior cuspidatus, she suddenly clapped her hand to her face, and screamed. On renewing the experiment a similar result ensued. The tooth was extracted, a large osseous deposit was on the fang. The patient is perfectly well.

Pittsburgh, March 20, 1840.

Immobility of the Lower-Jaw successfully treated.—Dr. JAMES HIGGINS, of West River, Maryland, has recorded an interesting case of this in the second number of the *Maryland Med. and Surg. Journal*. The subject of it was a negro boy, *ætat.* 12, who had been labouring under immobility of the lower jaw for three years. The account of the previous history of the case which Dr. Higgins received was the following:—"During the autumn of 1836, the child had suffered from a long and severe attack of remittent fever, in the course of treatment for which, it was thought necessary to produce pyalism: owing to inattention and neglect on the part of his mother, ulceration and sloughing of the cheek and gums of the left side supervened. The first stage of this destructive process was marked by a dusky vesicle, surrounded by an angry, livid appearance, which gradually extended, involving in its ravages the cheek, as far as the second molar tooth; the gums were also extensively implicated, and nearly all the teeth were lost from the incisors to the angle of the jaw—none being left below, and only the cuspidatus and two molars above, these latter loosed from their bony sockets, and adhering only slightly to the gums.

"This state of things continued progressing for four weeks, when an effort at reparation commenced, and after the lapse of nearly two months, the process of cicatrization was completed, leaving adhesions between the upper and lower jaw, as well as between the cheek and gums. A gradual approximation of the jaws took place during the healing process, which, when it was completed, left them so close that nutriment could only be taken in a liquid form, introduced with difficulty where the teeth were wanting in front. From a deficiency of

nutriment the patient had become very much emaciated; his general health suffered extensively, his articulation was rendered so indistinct that he could not be understood, and his life promised to be a burthen, both to himself and his proprietor, unless something could be done to relieve his unfortunate condition."

When the patient was seen by Dr. Higgins, the adhesions extended "from the cuspidatus of the left side to the angle of the jaw—the superior cuspidatus seemed to have attained nearly double its natural length, and projected downwards. The only teeth left on this side were two molars of the upper jaw, which were only slightly attached to the ligamentous adhesion, and could easily be moved by the fingers in every direction. The adhesion itself formed a perfect body with the gums, appeared to be rather of the nature of a ligament, than cartilaginous—was exceedingly dense and firm, and prevented entirely, any motion upwards or downwards, permitting only a lateral motion, scarcely perceptible, of from half a line to a line. The adhesion between the cheek and gums was a firm, unyielding, attenuated cicatrix, for half the distance between the corner of the mouth and the angle of the jaw; the other portion was fleshy, and the natural condition of the parts seemed to have undergone little or no change—union, however, had taken place between this part and the gum."

The operation was performed on the 10th of July in the following manner:—"The patient having previously taken *tr. opii*, *gr. lx*, was seated in a low chair, his head being held firmly back by an assistant. An incision was commenced at the commissure of the lips, and carried back to the angle of the jaw, laying open the cheek in its whole extent. The semi-cartilaginous adhesion between the jaws was then divided by a strong convex bistoury, and the cheek was afterwards carefully dissected from the gums. A broken spatula was then introduced between the jaws, to open a way for Dr. Mott's compound lever, which, after considerable effort I succeeded in inserting, and separating to nearly their full extent the jaws. This separation was attended with a harsh grating noise, like that of tearing asunder a cartilage. The two portions of the cheek were now brought together by a sufficient number of sutures, assisted by adhesive strips; and pledgets of lint, smeared with simple cerate, were introduced between the cheek and gums, to prevent their reunion. The operation lasted in all sixty-five minutes; the little patient was exceedingly restive, and I was frequently obliged to interrupt the operation, as the assistants could not hold him still. Not more than three ounces of blood were lost, nor was it necessary to secure any vessel. *Pulv. opii*, *gr. i*, was given at bed time.

"*July 11th*. Patient passed a good night, slight cephalalgia, thirst considerable, skin hot and dry, pulse ninety-eight, quick and slightly tense, bowels not moved for two days. *R. Magnes. sulphat.* \mathfrak{z} ss. and a little soup sucked through the spout of a teapot. He complained a good deal of pain, and a sense of fatigue at the angle of each jaw—Dr. Mott's lever which had slipped, was withdrawn, and its place supplied by a wedge of soft wood.

"*12th*. Rested well last night—the medicine operated three times, pulse ninety, slightly tense, no headache, no thirst, skin hot and dry. *R.* Neutral mixture, table-spoonful every three hours.

"*13th*. Removed the outer dressings—cheek looks well, very little tumefaction or suppuration, the greater part has united by first intention, patient makes no complaint.

"From this time, until *July 28th*, when I ceased visiting the patient regularly, his general health continued to improve, and the wound to heal kindly, no accident occurring to interfere with the progress of cicatrization. And when I saw him last, in the early part of December, he had almost perfect motion of his jaw, ate every thing with the greatest facility and enunciated very distinctly.

"I first thought of removing the external cicatrix, and supplying its place by fresh integument from the neck; subsequently I deemed it more advisable to remove it and extend the skin from the neck and face; this was done, and the result was perfectly satisfactory.

It will be seen that I followed, as nearly as the circumstances of the case would admit, the course adopted by Dr. Mott, in a case published in the *Ame-*

ican Journal for November, 1831. A case is published in the same number, by Jesse W. Mighels, M.D., of Maine, who in his operation, did not cut through the cheek, but introduced his bistoury at the angle of the mouth, and in this manner divided the morbid attachments. This he considers "an improvement worthy of notice, for independent of its saving at least some pain, there is no danger of the breaking of stitches, and slipping of adhesive straps during the cure." I am not disposed to attach much weight to this improvement; the scar on the cheek is a mere line, and this objection is fully counterbalanced by the greater facility and correctness with which the adhesions may be separated, when the cheek has been divided. Indeed, Dr. Mighels, in the modification of the operation, appears to have made a virtue of necessity, as the patient positively objected to having his cheek cut through.

"I think an improvement may be made on Dr. Mott's lever, by the addition of two prominences to the levers, say from four to six lines distant from their free ends. When the extremities are separated by the screw, they form a double inclined plane, towards the screw, and will slip into the patient's mouth, unless something be interposed. This defect, and it is a serious one, might be obviated in one of two ways—either first, by having two shoulders placed at a suitable distance from the ends of the lever; secondly, by having the levers made of a solid piece of metal, of a triangular shape, instead of being bent, as now, at right angles."*

Abscess in the right Iliac Fossa.—We have several times in this Journal invited attention to this disease, and in the *American Cyclopædia of Practical Medicine and Surgery*, vol. i, p. 80, gave a summary of what was known respecting it. There is much reason to believe that the affection is more frequent than is supposed, and that from want of acquaintance with the disease, practitioners often fail to recognise it.

The following interesting case communicated by Dr. TICKNOR to the New York Medical and Surgical Society, confirms these views, and we transfer it to our pages from the *New York Med. and Surg. Journ.*, in hopes of attracting attention to the subject.

"Mrs. E. W. aged 53, had cholera in '32; since then has had more or less complaint of the bowels—as irregularity of their action, attended with frequent excruciating pains. These paroxysms of pain would continue for a few hours, and then subside, leaving her in comfortable health. On September 10th, I was sent for to see her in the night, and found her vomiting a greenish bile, and complaining of severe and intolerable pain in the region of the caput coli, the seat of which she said she could cover with a dollar. There was but little tenderness of this region on pressure. I prescribed calomel and opium, with injections sufficient to evacuate the bowels, and leeches to the abdomen. These gave but temporary and slight relief; I then blistered the part which was tender on pressure, with considerable relief of the pain; but as soon as the blistered surface healed, the pain reappeared in its original location. I then made a second blister, and when it was about to heal, I applied a plaster of Mezereon ointment; this caused a good deal of irritation in the nervous system, and from this moment the internal pain seemed to be transferred to the skin, directly where the last plaster was applied. After the blister healed, the skin yet remained painful and exceedingly tender to the touch; and from this time to the day of her death, the slightest touch of this part with the finger caused the greatest pain. This sensibility of the skin extended downwards into the groin, to the top of the thigh, and around the whole hip. After laying the fingers gently upon the sensitive skin, she could then bear firm pressure without the least pain, except

* A better instrument, probably, is that employed by Dr. Mutter. See our preceding No. p. 91.

About a year since we saw two cases of immobility of the lower jaw with very extensive adhesions, the consequence of excessive salivation, treated with success, by Dr. J. R. Barton, of this city, by operation. We should be pleased to receive from him the details of these cases.—Ed.

over the region where pain was first felt; and even there I frequently made firm pressure without causing the slightest uneasiness.

"Pains, which seemed to be more deeply seated than the skin, extended down the leg to the foot, but after a time were confined to the neighbourhood of the hip joint. After the first two weeks, the pain was so great on extending the limb, that it assumed the flexed position, and was never afterwards straightened.

"Occasionally, there would be fulness of the affected side, which would disappear in a short time, leaving the whole abdomen lank.

"A proposed consultation to the friends was not listened to, till about the sixth week of the patient's illness, when Dr. J. K. Rodgers saw her at my request.

"Of one thing he was certain—and that was, that there was no disease of the hip joint, and the painfulness of the skin, and absence of pain or tenderness on pressure, left the case in great obscurity.

"About three days before death, there was a tumefaction, containing air, about two or three inches in diameter, just below the crest of the ilium, on the posterior part of the hip. There was some fever from the commencement till toward the termination of the disease, which took place on the 10th of November.

"*Post-Mortem Examination* by Dr. Rodgers and myself, about 24 hours after death.

"Great emaciation—Fullness of the anterior part of the abdomen, between the umbilicus and spine of the ilium and pubis, occupying the whole region made by a line drawn from the umbilicus outwards with the linea alba. Integuments livid, four inches in length, in the direction of Poupart's ligament, and vesicated one quarter of the distance between the ilium and spine of the pubis. On turning aside the integuments, we came directly upon a fecal abscess, corresponding to the head of the colon. The liver was rather pale, gall-bladder distended; urinary bladder full; firm adhesion between the caput coli and peritoneum; all the bowels natural except the part to be described.

"There was an ulcer of the posterior parietes of the head of the colon, of the size of a dollar, and a perforation of the intestine about as large as a sixpence. The contents of the bowel had escaped by this perforation, and followed the course of the *pross magna* behind Poupart's ligament, thus forming the prominence on the anterior part of the abdomen. There was no evidence of recent inflammation, and the probability is that the perforation occurred on the night of the 10th of September when the patient was first taken ill, and that the ulcer was of long standing."

Case of injury of the Head by a fall.—Dr. J. L. BURTT, of Cincinnati, relates in the *Western Journal* (June 1840) the case of a child 3 years of age who fell from a window a height of perhaps sixteen feet on the brick pavement, alighting on the top of the head. "When taken up, and for an hour afterwards, the cranial bones were so depressed as to present an almost level surface. I might safely say, that its head was as flat as a table.

"The *os frontis* projected forward at least two inches over the eye brows, in its natural position. The child was examined by Drs. Mussey and Fore. It presented all the symptoms of violent concussion of the brain for about an hour.

"Its head was shaved, but on examination no symptom of fracture was found as had been expected. After this period, a spasmodic action of the facial muscles ensued, and shortly after it vomited several times, which seemed to relieve it and in a great degree to overcome the remaining stupor.

"Cold applications to the head, and enemata, which were speedily followed by copious evacuations, formed the treatment at this period. From the time that its bowels acted it seemed perfectly sensible, knowing its mother and asking for water. In the mean time, the cranium had made considerable advances towards its proper elevation. I sat up with it during the night—it rested well; the reaction was not high, so that bleeding was not necessary; and the cranial bones rapidly assumed their natural position. From this time until the 30th, the convalescence was rapid, the only treatment being cold applications to the head, and the administration of gentle cathartics."

"On the 2d of June, the child was to all appearances well."

We hope the relator of this case will make known the result a year hence.

Sudden Death from Rupture of the Spermatic Vein.—Dr. JAMES M'NAUGHTON of Albany has recorded in the fourth volume, part 3, of the *Transactions of the Medical Society of New York*, an interesting case of this description. The subject was a female 38 years of age, who had always enjoyed good health. During the night of the 27th of January, she did not sleep well, was troubled with dreams and her bowels felt "bloated." The next morning, she ate a hearty breakfast, but soon afterwards the uneasy sensations increasing she took a dose of salts, which produced nausea and vomiting. The pain then became so severe that Dr. Boyd was sent for. He found her very pale, with a cold surface; lips and tongue pallid, complaining of pain in the lower part of the bowels, also generally throughout the abdomen and thorax; with constant bearing down; difficulty of breathing and faintness; pulse small and weak. He ordered calomel and opium, in divided doses.

The symptoms went on increasing in severity and Dr. Staats was called to her in consultation at 4 P. M. (Jan. 28.) On examination, Dr. S. discovered an elastic round tumour, near the umbilicus, $1\frac{1}{2}$ or 2 inches in diameter. This was considered as the cause of some of the symptoms, though the patient denied this, saying she had had the tumour for fifteen or sixteen years, ever since her last confinement. A catheter was introduced and but little urine found in the bladder.

Dr. M'Naughton was then added to the consultation; he found the patient pale, cold, and almost pulseless; complaining of pain in the lower part of pelvis, and urgent desire to void urine. The bowels were slightly tumid, but not tense; general uneasiness of the whole abdomen, and great tenderness about navel.—Close to this last part, there was a hernial tumour which gave great pain to the patient even on gentle pressure. Believing that this tumour was the source of most of the bad symptoms, Dr. M'Naughton thought it prudent to reduce it and succeeded in doing so, by gentle, steady pressure in a few minutes, the patient all the time complaining most bitterly of the pain. The reduction of the tumour was followed immediately by sickness and vomiting. Soon after she became somewhat easier and her pulse rose a little.

The next morning (Jan. 29) her hands were somewhat warmer and pulse more distinct; face pale, cold and cedematous; bowels fuller and tenderer; at umbilical foramen a small soft tumour less than an inch in diameter, resembling an omphal hernia, and scarcely distinguishable from the surrounding adipose matter, except by its circumscribed form. Her medical attendants feeling suspicious that this apparent protrusion had some agency in keeping up the urgent symptoms, it was determined to cut down upon it to ascertain its condition, and this was performed by Dr. March, who had been added to the consultation. "The integuments over the tumour were thin; the tumour itself appeared round and smooth; covered by a sack, the vessels of which were dark and loaded with blood, but upon the division of this the enclosed adipose matter appeared of its natural healthy colour, and consisted of a cluster of masses of fat of different sizes. The umbilical foramen was narrow, but readily admitted a directory through it within the neck of the sack. The linea alba was divided downwards for a short distance by the bistoury guided by the directory, and the whole protrusion readily returned within the abdomen. The parts were then brought together in the usual manner and the patient left to repose."

The operation did not afford any material relief, and the state of the protrusion was not such as would satisfactorily account for the intensity of the prostration. The bearing down and the urgent desire to void urine continued. The uterus was very low in the pelvis, and morbidly sensible to the touch, but not larger than usual in the unimpregnated state in persons who have borne child. In the evening the symptoms were somewhat milder; an enema had been exhibited and came off without bringing much feces with it. This was followed by a full dose of calomel, and the patient was left for the night to the charge of her nurse. On the morning of the 30th she seemed somewhat better—skin warmer, and

had a free discharge from her bowels. In the course of the day her distress returned, and she passed a restless, uncomfortable night. She continued to sink and died on the morning of the 31st.

On *post mortem* examination the next morning, well formed pus was found at the umbilicus beneath the abdominal tendon, external to the peritoneum. Internally, the peritoneum appeared healthy and free from inflammation. The tumour which appeared at the umbilicus, and which was reduced by the operation, proved to have no connection with the omentum, but to be merely a mass of adipose matter external to the peritoneum—filling up the umbilical foramen.—Half an inch below there was a small opening in the linea alba, through which the herniary tumour, which had been reduced by the taxis, had protruded. The omentum and the abdominal viscera in the immediate vicinity of the umbilicus, were healthy in appearance, and in their proper relative positions; but both the small and large intestines were enormously distended with flatus. The interstices between the intestines were occupied by bloody serum, and the *whole pelvis was filled with a coagulum of venous blood*, which on removal filled a large chamber pot. The source of this hemorrhage was traced to the right spermatic vein; the condition of the vessel is not however described. The ovaria were shrivelled and hard. The upper part of the jejunum appeared dark for more it readily gave way, and had evidently lost its vitality. It was distinctly more than eighteen inches; and upon drawing this portion between the fingers and thumb, friable than the same membrane either above or below this point. It was concluded that this point had been protruded through the opening of the linea alba, and had been strangulated; that to this was attributable the tenderness about the navel, the vomiting, &c.; that the intestines were not thickened, nor the peritoneum inflamed more, might be accounted for by the exhausted state of the vascular system, not admitting of the occurrence of acute inflammatory reaction.

There is a case somewhat similar to this related in Professor Christison's work on Poisons. In that case, however, there was a fallopian conception, and the hemorrhage took place from the appendages of the ovum. In Dr. M'N.'s patient there was no pregnancy, either uterine or extra-uterine, and she had enjoyed good health for years previously.

Asylum for the Relief of Persons deprived of the use of their Reason.—The twenty-third annual report on the state of this institution has recently been published. From the report of the physicians, (Drs. Charles Evans and Thomas Wood,) we extract the following interesting information.

There were received into the institution, during the first year ending the 28th of February, 1840, 54 patients, which, added to 65 in the house at last report, makes a total of 119 persons under care during the twelve months.

Of these 119 patients, 63 are males, 56 females; 73 are single, and 46 have been married.

"Their classification, and the result of treatment, are as follows:

FIRST CLASS.

Patients diseased less than three months at the time of admission, and the first attack,	-	-	-	-	-	-	-	8
Restored,	-	-	-	-	-	-	-	5
Much improved,*	-	-	-	-	-	-	-	1
Convalescent,	-	-	-	-	-	-	-	1
Died,	-	-	-	-	-	-	-	1—8
Under three months, but not the first attack,	-	-	-	-	-	-	-	16
Restored,	-	-	-	-	-	-	-	12
Convalescent,	-	-	-	-	-	-	-	1
Stationary,	-	-	-	-	-	-	-	1
Died,	-	-	-	-	-	-	-	2—16

* Was well soon after leaving the Asylum.

SECOND CLASS.

Over three and under twelve months,	-	-	-	-	-	24
Restored,	-	-	-	-	-	11
Much improved,	-	-	-	-	-	2
Improved,	-	-	-	-	-	2
Stationary,	-	-	-	-	-	8
Died,	-	-	-	-	-	1—24

THIRD CLASS.

Between one and two years,	-	-	-	-	-	6
Restored,	-	-	-	-	-	3
Improved,	-	-	-	-	-	2
Stationary,	-	-	-	-	-	1—6

FOURTH CLASS.

Over two years,	-	-	-	-	-	65
Restored,	-	-	-	-	-	4
Much improved,	-	-	-	-	-	3
Improved,	-	-	-	-	-	10
Stationary,	-	-	-	-	-	48—65

Of the fourth class there are but five who have been deranged less than five years: twelve have been deranged between five and ten; twelve between ten and twenty; ten between twenty and thirty; and four over forty years; four, imbecile from puberty are included in the number.

Where patients are discharged with certificates of "much improved," and convalescence goes on until health is completely restored, the cure may be justly attributed to the means employed at the Asylum.

RECAPITULATION.

Patients in the Asylum 3d month 1st, 1839,	-	-	-	-	-	65
Received since,	-	-	-	-	-	54—119
Discharged or died,	-	-	-	-	-	60
Remaining in the Asylum 3d month 1st, 1840,	-	-	-	-	-	59—119
Of the sixty patients discharged there were, restored,	-	-	-	-	-	25
Much improved,	-	-	-	-	-	5
Improved,	-	-	-	-	-	9
Stationary,	-	-	-	-	-	17
Died,	-	-	-	-	-	4—60
Of the fifty-nine patients remaining in the house, there are restored,	-	-	-	-	-	10
Convalescent,	-	-	-	-	-	3
Improved,	-	-	-	-	-	4
Stationary,	-	-	-	-	-	43—59

"Of the seventeen patients discharged 'stationary,' eight had been deranged more than ten years, two between five and ten years, and three were imbecile from youth.

"Of those remaining in the house, *stationary*, four are imbecile, two are epileptics, one has been deranged over thirty years; ten between twenty and thirty; eight between ten and twenty, and thirteen between five and ten years. One entered the institution yesterday.

"Six of those remaining in the house, restored, are waiting until sufficient time has elapsed to test the security of their health, and four are old cases of paroxysmal insanity, now enjoying an interval of reason.

"Excepting the four cases which terminated fatally, there has been but little serious *acute* disease in the house during the year; and at the present time the patients are nearly all in the enjoyment of good health, with the exception of

those lesions of the brain which affect the manifestations of the mind. No accident of a serious character has occurred, and beside the cures which have been effected, the comfort of those individuals, suffering from long standing disease, and who have been brought to the institution with little or no hope of their being restored, has been uniformly augmented, their habits greatly improved, and in many instances their affliction stripped of many of its most distressing characteristics.

"In effecting these results, the same combination of medical and moral treatment has been relied upon, which, under the blessing of Divine Providence has heretofore been attended with the same gratifying success. In the medical prescriptions, we have no favourite remedy to be resorted to as a panacea upon all occasions; but endeavouring to become acquainted with the various morbid conditions which characterize each individual case, the effort is made to adopt such a course of therapeutical treatment as they appear respectively to demand.

"The amusement of the convalescent patients, and their employment in some manual labour, with a view of promoting their bodily and mental health, has of latter years claimed increased attention in our institution; and the beneficial effects constantly arising from them, prove that they are deserving the care bestowed in their promotion. From the more sedentary habits, and the kind of employment to which all females are more or less accustomed, there is comparatively but little difficulty in furnishing them with occupation suited to their tastes; but the introduction of a *general* system of employment amongst a company of men, many of whom have never been accustomed to labour of any kind, is attended with many more difficulties than those practically unacquainted with the subject, are likely to suppose. We have, however, by the liberality of the managers, succeeded within the last year to a much greater extent than at any former period. In addition to our former resources the workshop has been greatly enlarged and improved, and the manufacture of baskets has been introduced. From both these, the most decided advantage has been gained; many of the patients becoming permanently interested in the occupation furnished by them respectively, have thereby been enabled to pass away their time agreeably to themselves, while the exercise and amusement thus afforded, have contributed powerfully to the restoration of their health. Connected with this subject we may here say, that in conformity with the experience of all other similar institutions which have made the experiment both in this country and in Europe (numbering twelve or fourteen) we have found no danger in trusting the patients with all such tools as are requisite for carrying on their different kinds of work. No accident whatever has occurred, either to them or their attendants; nor do we think any need be apprehended, so long as care is taken in the selection of patients to be employed, and in having suitable caretakers constantly with them.

"During the summer months many of the men spend some hours of the day in working in the garden and on the farm; nor, indeed are they wholly debarred from the benefit derived from this kind of employment during the winter, as the care of the stock, &c., affords sufficient opportunity and inducement for some to employ themselves in the open air.—As experience has fully proved that exercise in the open air promotes the more speedy cure of the insane, we endeavour to extend to those under our care its advantages, by making it a rule, that whenever the weather will permit, all the patients who are well enough, shall pass a portion of their time out of doors, and by inducing them to engage in some of the various kind of amusement provided, as playing quoits, ball, walking, &c. Riding in the carriage, and upon the circular railroad, situated in the lawn fronting the house, continue to be favourite sources of health and enjoyment. Most of the patients have continued to meet on one evening in the week during the winter, as a society, for the purpose of engaging in conversation or debate; and a course of lectures on chemistry, illustrated with interesting experiments, has been delivered to them by the resident physician.

"We have still cause to repeat the complaint so often reiterated in our former reports, that most of the patients brought to the Asylum, have been allowed to

suffer under their diseases, for so long a time, before their friends were willing to place them in an institution prepared expressly for the treatment of the insane that the probability of their restoration is materially lessened: and also that after recovery has been effected, in too many instances the friends of the patients are persuaded to remove the individual before sufficient time has been allowed for the brain to have its healthy tone corroborated. An improvement however in this latter respect is taking place."

3. *Statistics of the State Lunatic Asylum at Worcester.*—We have before us the very interesting Seventh Annual Report of the above named, well conducted institution, from which it appears that during the seven years it has been opened, there have been received into it 1034 patients of whom 805 have been discharged. Of this last number 424 have recovered, 75 have died, and 306 have been discharged not recovered, some as harmless or incurable, some for want of room, and others by order of the courts, or at the request of friends.

The following table exhibits some valuable statistical information.

	Average.	1854.	1855.	1856.	1857.	1858.	1859.
RECOVERIES.							
Per cent. of cases discharged recovered, of duration less than one year, - - -	85 5-6	82	82 1-2	84 1-2	89 1-2	86 1-2	90 1-7
Per cent. of recoveries of all discharged, - -	51 3-4	53 3-4	46 1-2	53 1-4	57	52 1-2	47
Per cent. of recoveries of old cases discharged,	18 2-3	20 1-2	15 3-4	18 2-3	25 1-2	15 1-2	16 1-2

There have been admitted since the hospital was opened, 418 cases, of duration less than one year.

There have been discharged recovered, of recent cases, in the same time, 340, (340 of 418,) which is 81 1-3 per cent.

Deduct from these 17 deaths of recent cases, which are not usually included in estimates of recovery, as such cases have little trial of curative means, and there remains 340 of 401, which is 84 3-4 per cent. Thirty-four of these now remaining in the hospital are mostly convalescing, which, being deducted, leaves 340 of 367, which is 92 2-3 per cent.

There have been in the hospital 1034 patients;—there have been discharged, recovered, 424, which is 41 per cent.

	1854.	1855.	1856.	1857.	1858.	1859.
DEATHS.						
Per cent. of deaths of all in the hospital each year, - -	3 1-2	3 1-2	3 1-4	3	4 1-2	5 1-2
Per cent. of the whole number, (75 of 1034,) - - -	-	-	-	-	-	7 1-4

There are at present in the hospital 195 cases of longer duration than one year, (195 of 229,) which is 85 1-7 per cent.

There are 34 cases of less duration than one year; which is 14 6-7 per cent.

Per cent. of recoveries of insanity arising from certain causes:

From intemperance, - - -	49 3-4 per cent.
Domestic afflictions, - - -	56 3-4 per cent.
Ill health, - - -	63 2-3 per cent.
Religious causes, - - -	58 per cent.
Masturbation, - - -	23 3-4 per cent.

Hereditary, (311 of 1034,) - - -	30 per cent.
Periodical, (188 of 1034,) - - -	18 per cent.

Of the 1034 patients who have been in the hospital, there were
 Single, including widowers and widows—660—63 4-5 per cent.
 Married, - - - - - 374—36 1-5 per cent.

Library of Practical Medicine.—The second, third and fourth volumes of the London Edition of this work are on our table. The second volume is appropriated to the various diseases of the nervous system; the third to those of the organs of respiration and of the heart; and the fourth to those of the arteries, veins, organs of digestion, urinary organs, and female organs of generation.

These volumes fully maintain the high character which the first one obtained for the work, and we doubt not that encouragement will be afforded for their republication in this country.

Jefferson Medical College.—The class in this institution, the past Session, according to the printed catalogue, numbered 145.

Vermont Academy of Medicine.—This institution, located at Castleton, has been revived with the following faculty: Horace Green, M. D. Theory and Pract. Med.; Robt. Nelson, M. D. Gen. and Spec. Anat. and Phys.; James Hadley, M. D. Chem. and Pharm.; James Bryan, M. D., Princip. and Pract. of Surg.; Joseph Perkins, M. D. Mat. Med. and Obstetrics; Ralph Gowdey, M. D. Med. Jurisp. The number of students at the Session of March 1840, was 57.

The course of instruction consists of a lecture term, and a reading term. The first commences on the second Thursday of March, and continues 14 weeks. Fee for the whole course \$50. Matriculation \$5.

Reading term from 15th June to 1st March, conducted by Drs. Perkins and Jamieson. Fee \$36.

Louisville Medical Institute.—At a commencement held March 10th, 1840, the degree of M. D. was conferred on 39 students.

Samuel D. Gross, M.D. late Professor of Anatomy and Physiology in Cincinnati Medical College, has been appointed Professor of Surgery, in the place of Dr. Flint, resigned.

Kemper College.—A medical department of this college has been organized in the city of St. Louis, Missouri, and the following constitute the Faculty: Joseph McDowell, M. D. Anatomy and Surgery; J. W. Hall, M. D. Theory and Practice of Med.; Hiram A. Prout, M. D. Mat. Med. and Med. Bot.; John S. Moore, M. D. Inst. of Med. and Obstetrics; John De Wolf, M. D. Chem. and Pharm.

In the circular which has been forwarded to us it is announced that "A summer school is now in successful operation, and a part of the faculty are delivering gratuitous lectures to those in attendance."

How many students are in attendance on this successful course of GRATUITOUS Lectures is not stated. We must express our regret at seeing this boastful announcement, for it would seem to indicate that this school had entered the field to compete for pupils by a recourse to the means formerly adverted to (see No. for Nov. 1839, p. 249, and Feb. 1840, p. 413) as being employed by others for the same purpose, and which has brought about the existing overcrowded state of the profession and must eventually accomplish its complete degradation.

It is mortifying to us to have to record nothing respecting medical education in this country, except additions to our schools, which like Banks have been already multiplied so far beyond the wants of the country, that the diplomas of the one and the notes of the other, are for the most part considered equally valueless.

Whilst in France and Great Britain efforts are constantly making to raise the standard of qualification for the Doctorate, in this country all that has been done is to increase the facilities of entrance; the qualifications seem to be regarded as secondary considerations. In France since 1836 no one has been permitted to

take his first inscription (enter as a student) unless a master of letters, or to take his last inscription, without being a master of sciences: the examinations are more rigid than formerly, and an effort is now making to abolish the inferior grade of practitioners, the "*officiers de Santé*," and to allow no one to practice medicine or surgery but Graduates in Medicine.

In Great Britain, the different corporations have all raised the requisites for their diplomas within the last few years, and the following extract from the regulations to be observed by candidates for the Diploma of the Royal College of Surgeons, Edinburgh, enacted 28th September 1836, will exhibit the views of that respectable body.

"The Royal College of Surgeons of Edinburgh, in revising from time to time their regulations respecting the course of study to be followed by candidates for their diploma, have been uniformly anxious to extend and improve the education of those who receive that testimonial of qualification, so as more and more to secure their being competent to perform their professional duties with credit to themselves and advantage to the public.

"It will be obvious to all who consider the extended and complicated nature of Medical science, that much of the success of the student, in the prosecution of its various branches, must depend upon the previous cultivation of his mental faculties; and that it is consequently of the utmost importance, both as regards the interest of the public, and the future comfort and respectability of the practitioner, that all who apply to the study of Surgery should have previously received a liberal education. The College have enacted some regulations having the securing of this for their object; and they confidently trust, that medical practitioners in every part of the country will be disposed to second their endeavours, by recommending to the young men who may be placed under their care, or who may apply to them for advice, the study of the *Latin, Greek and Modern languages*, and of *Logic, Mathematics and Natural Philosophy*, as the best preparation for entering upon a course of medical and surgical education. And they would strongly urge their own Fellows, as well as all other practitioners, not to take any young man as an apprentice, until he shall have gone through such a preliminary course."

It is time that something similar should be done in this country, and most earnestly do we urge the subject on the attention of the profession, and indeed the whole community, who are as much interested in the honour, dignified standing, and extensive attainments of practitioners of medicine as the profession itself.

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UNIVERSITY OF PENNSYLVANIA—MEDICAL DEPARTMENT.

The course of Lectures will commence on Monday the 2d day of November, and be continued under the following arrangement:—

Practice and Theory of Medicine, Nathaniel Chapman, M.D.; Chemistry, Robert Hare, M.D.; Surgery, William Gibson, M.D.; Anatomy, William E. Horner, M.D.; Institutes of Medicine, Samuel Jackson, M.D.; Materia Medica and Pharmacy, George B. Wood, M.D.; Obstetrics and the Diseases of Women and Children, Hugh L. Hodge, M.D.

Clinical Lectures on Medicine and Surgery are delivered regularly at the Philadelphia Hospital, (Blockley,) and at the Pennsylvania Hospital, from the beginning to the end of the Session.

W. E. HORNER, M.D., Dean of the Medical Faculty,

Philadelphia, July 15, 1840.

263 Chestnut St., *Philadelphia.*

JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA—SESSION OF 1840-41.

The regular Lectures will commence on the first Monday of November. The following are the professors in the order of their appointment:—

1. Jacob Green, M.D., Chemistry. 2. Granville S. Pattison, M.D., Anatomy. 3. John Revere, M.D., Practice of Medicine. 4. Robley Dunglison, M.D., Institutes of Medicine and Materia Medica. 5. Robert M. Huston, M.D., Obstetrics and Diseases of Women and Children. 6. Joseph Pancoast, M.D., Surgery.

On and after the 1st of October, the Dissecting Rooms will be kept open, and the Professor of Anatomy will give his personal attendance thereto. Lectures will likewise be delivered regularly during the month on various branches, and opportunities for clinical instruction will be afforded at the Philadelphia Hospital, under the Professors of Institutes of Medicine and Surgery; and at the Dispensary of the College under the Professors of Physic and Surgery.

JOHN REVERE, M.D., Dean of the Faculty.

Philadelphia, July 15, 1840.—Nov. 15.

COLUMBIAN COLLEGE, DISTRICT OF COLUMBIA.

The Lectures in the Medical Department of this Institution will commence on the first Monday in November, annually, and continue until the 1st of March.

During this period, full courses will be delivered on the various branches of Medicine by

Thomas Sewall, M.D., Professor of Pathology and the Practice of Medicine; Thomas P. Jones, M.D., Professor of Chemistry and Pharmacy; Harvey Lindley, M.D., Professor of Obstetrics, and the Diseases of Women and Children; Thomas Miller, M.D., Professor of Anatomy and Physiology; John M. Thomas, M.D., Professor of Materia Medica and Therapeutics; J. Frederick May, M.D., Professor of Surgery, late Professor of Surgery in the University of Maryland; Samuel C. Smoot, M.D., Demonstrator of Anatomy.

As there are many young men of talent and worth in different parts of our country, who, from restricted circumstances, are unable to avail themselves of the benefit of public lectures, the Professors have resolved to admit, gratuitously, two such students from each of the States, and one from each of the Territories. In order, however, to guard against individuals whose education and character do not qualify them to become useful members of the profession, the selection is placed in the hands of the Senators and Delegates of Congress, each of whom has the right to select one student from his respective State or Territory, and whose certificate of selection will be a passport to all the lectures, by paying only, on entering the school, the usual matriculating fee of five dollars.

The entire expense, for a Course of Lectures by all the Professors, is \$70. Dissecting Ticket \$10; optional with the student.

Good board can be procured at from three to four dollars per week.

J. M. THOMAS, M.D., Dean of the Faculty.

City of Washington, June 2, 1840.

GENEVA MEDICAL COLLEGE.

The Medical Lectures will commence on the first Tuesday of October, and continue sixteen weeks.

Institutes and Practice of Medicine, T. Spencer, M.D., Geneva. Obstetrics and Medical Jurisprudence, C. B. Coventry, M.D., Utica. Anatomy and Physiology, James Webster, M.D., Rochester. Chemistry and Pharmacy, James Hadley, M.D., Fairfield. Materia Medica and General Pathology, John De La Mater, M.D., Saratoga Springs. Principles and Practice of Surgery, Frank H. Hamilton, M.D., Rochester. Demonstrator, Sumner Rhoades, M.D., Geneva.

THOMAS SPENCER, Registrar.

C. B. COVENTRY, Dean.

Geneva, July, 1840.

HARE ON THE SPINE.

This day is published, in Royal 8vo., Dedicated by permission, to Sir Benjamin Collins Brodie, Baronet, V. P. R. S., and Charles Aston Key, Esquire, Senior Surgeon to Guy's Hospital.

Practical Observations on the Causes and Treatment of Curvatures of the Spine: with Hygienic Directions for the Physical Culture of Youth as a means of preventing the Disease; an Etching and Description of an Apparatus for the Correction of the Deformity; and engravings illustrative of the cases: to which is added a chapter on Pulmonary Consumption. By Samuel Hare, Surgeon, Leeds. London: Simpkin, Marshall & Co. Leeds: W. Bean & Son, and all Booksellers.

The following Medical Works are published by Lea & Blanchard.

Annot's Elements of Physics, 2 vols.
American Journal of the Medical Sciences,
Edited by Dr. Hays.
Abercrombie on the Brain.
Abercrombie on the Stomach.
Bell on the Teeth—a new edition.
Bertin on the Diseases of the Heart, 8vo.
Broussais on Phlegmasia, 2 vols.
Barton's Flora of North America, 3 vols.
4to.
Buckland's Geology and Mineralogy, 2
vols. 8vo. plates.
Bridgewater Treatises, 7 vols. 8vo.
Chitty's Medical Jurisprudence, 1 vol. royal
8vo.
Coatts' Popular Medicine, 1 vol. 8vo.
Cyclopædia of Practical Medicine and Sur-
gery, edited by Dr. Hays, 10 Nos.
Clark on Consumption, 1 vol.
Dewees' System of Midwifery.
Dewees on Children.
Dewees on Females.
Dewees' Practice of Physic.
Dunglison's Physiology, 2 vols. 8vo.

Dunglison on Hygiene, 1 vol. 8vo.
Dunglison's Therapeutics, 1 vol. 8vo.
Dunglison's Medical Student, 1 vol. 8vo.
Dunglison's Medical Dictionary, 1 vol.
royal 8vo.
Dunglison's New Remedies, 1 vol. 8vo.
Ellis's Medical Formulary, new edit.
Ewell's Medical Companion.
Faraday's Chemical Manipulations.
Fitch's Dental Surgery, 8vo. new edit. with
plates.
Gibson's Surgery, 2 vols. 8vo., new edit.
Hutin's Manual of Pathology.
Horner's Special Anatomy, 2 vols., new ed.
Kirby on the History, Habits, and Instincts
of Animals, 8vo., plates.
Manual of Materia Medica, by Tognio.
Popular Medicine, or Family Adviser, 1
vol. 8vo.
Roget's Animal and Vegetable Physiology,
with 500 wood cuts, 2 vols. 8vo.
Roget's Outlines of Physiology and Phre-
nology, 1 vol. 8vo.
Smith on Fevers.

THE RESPIRATOR, OR BREATH WARMING INSTRUMENT,

FOR GIVING WARMTH TO THE AIR DRAWN INTO THE LUNGS IN BREATHING.

FOR SALE AT

GEO. W. CARPENTER'S

Chemical Warehouse, 301 Market Street, Philadelphia.

THIS small and delicate instrument is of two kinds: one, the Oral Respirator, is worn over the mouth; the other, the Orinasaal, covers the nostrils also. It is finished in a style so neat as to render it as little disfiguring as possible. It does not at all obstruct the passage of the breath, nor affect the voice. The lowest whisper audible without the instrument is heard equally well when it is on.

Whether the atmosphere be cold and damp, this instrument is found effectually to temper it; so that the most delicate person may face any air while wearing it. It removes coughs arising from cold air, and thus gives refreshing rest to many persons whose nights used to be rendered sleepless by coughing. Not only is the breath warmed by this instrument but it also diffuses warmth over the whole body. Hence, it has afforded much comfort to persons suffering from chilliness of the limbs, which was disturbing their digestion, and to those especially whose sleep was impaired by coldness of the feet, which they were unable by any other means to preserve in a state of comfortable warmth. For these purposes of removing cough, or of warming the limbs, the Respirator is worn in bed by numerous persons.

As already remarked, the Respirator will be found also to correct either extreme dampness or dryness of the atmosphere. Damp combined with cold constitutes the rawness of foggy air. By warming it, the Respirator effectually removes this rawness. Again, northerly winds are often distressing on account of their dryness as well as coldness. The Respirator renders such air moist as well as warm, by the humidity distilled from the breath, and deposited on the numerous wires which moistens the air as it enters. There are a few invalids who actually wear the Respirator in warm but dry weather, on account of this moistening or fomenting effect alone.

Another curious and important effect of the Respirator remains to be explained. It is well known that all, or nearly all, of the animal heat which is necessary for life, is being continually produced in the lungs, and is carried to every part of the body, by the blood-vessels, and that thus the body is kept warm, although the heat is constantly passing off from its surface. Furthermore, a healthy person, whose breathing is vigorous, forms in his lungs twice as much heat as he needs, because the breath absorbs, and carries away outwards from the lungs as much or nearly as much heat as the blood absorbs and carries onwards. But a delicate or aged person whose breathing is feebler, cannot afford to lose so much warmth by the breath. Hence his chilly feelings and the coldness of his hands and feet, which stand in need of that warmth which every outgoing breath is robbing him of. Now the Respirator is useful to this person who feels the cold in his limbs, as well as to him who feels it striking his lungs; for by recovering warmth from every out-going, and giving to each in-coming breath, it is constantly restoring to the lungs their own warmth; whence they have so much the more to diffuse throughout the body. Hence the number and variety of cases to which the Respirator is applicable, is greater than at first sight might appear possible. Not only does it afford relief in all the more trifling affections in which coldness, dampness, or dryness of the air occasions uneasiness and cough, but it even enables persons very ill with asthma, or pulmonary consumption, to go out at all times with impunity and even benefit. And in cases in which the chest or throat are not delicate, but the chilliness is in the limbs, considerable benefit has been derived from its use as already explained.

Testimonials regarding the Respirator or Breath-Warming Instrument.

PROFESSIONAL TESTIMONIAL.

'The Respirator,' having been submitted to our inspection, we find it to be an instrument invented for the highly desirable object of warming the air inhaled by those invalids to whom the breathing of cold air is distressing and injurious. We consider the instrument to be founded on strictly philosophical principles; and we admire in the execution of it, both the rigid adherence to these principles, and the delicacy of the workmanship. We believe it to be well calculated to effect its object, and we recommend it to the notice of the large class of invalids for whose comfort it is constructed, and who are in urgent need of the means whereby they may enjoy air and exercise, and follow their avocations abroad."

This testimonial is signed by the gentlemen whose names are placed below:—Babington, B. G., M. D., F. R. S.; Brodie, Sir Benj., Bart. F. R. S.; Burnett, Sir William, K. C. N.; Carlisle, Sir Anthony, F. R. S.; Chambers, W. F., M. D., F. R. S.; Clark, Sir James, Bart. M. D., F. R. S.; Clarke, Sir Charles M., Bart. F. R. S.; Conquest, J. T., M. D.; Cooper, Sir A., Bart. F. R. S.; Daniell, J. F., F. R. S.; Davies, Thomas, M. D.; Earle, Henry, Esq. F. R. S.; Elliotson, John, M. D., F. R. S.; Gordon, Theodore, M. D.; Holland, H., M. D., F. R. S.; Hope, James, M. D. F. R. S.; Hume, J. R., M. D.; Johnson, James, M. D.; Julius, George C., M. D.; Liston, Robert, Esq.; Lloyd, E. A., Esq.; McGrigor, Sir James, Bart.; Macleod, Roderick, M. D.; Mayo, Thomas, M. D., F. R. S.; Mayo, Herbert, Esq., F. R. S.; Paria, J. Ayron, M. D., F. R. S.; Seymour, Edward, M. D.; Thomson, A. T., M. D.; Thomson, H., M. D.; Travers, Benjamin, Esq. F. R. S.; Watson, T., M. D.

The experience of many thousand persons has confirmed the opinion formed of the Respirator by the above distinguished individuals. The inquirer, who may wish for evidence of this character will find all that he can desire in the following letters, which are a few only of those the inventor has been favoured with:—

From John Shore, Esq.

DEAR SIR—I consider it due to you to offer you my best thanks for the great benefit I have derived by using the Respirator invented by you. In the early part of February last a friend of mine, observing the great distress I experienced in breathing in the open air, and afterwards on entering a warm room, advised me to try the Respirator. At his suggestion I lost no time in purchasing one, which I have constantly used since that time till within the last few days, and the great comfort I have derived from it has far exceeded my expectations.

By wearing the Respirator I have been enabled to walk out in cold north-east winds without experiencing any difficulty in breathing, and by taking exercise my general health has been much improved.

I have great pleasure in inclosing a copy of a letter from Mr. Metcalfe to me, dated the 1st instant, in which he expresses the great comfort he has derived in using the Respirator, which you are at liberty to make such use of as you may think proper.

I am, dear sir, yours faithfully,

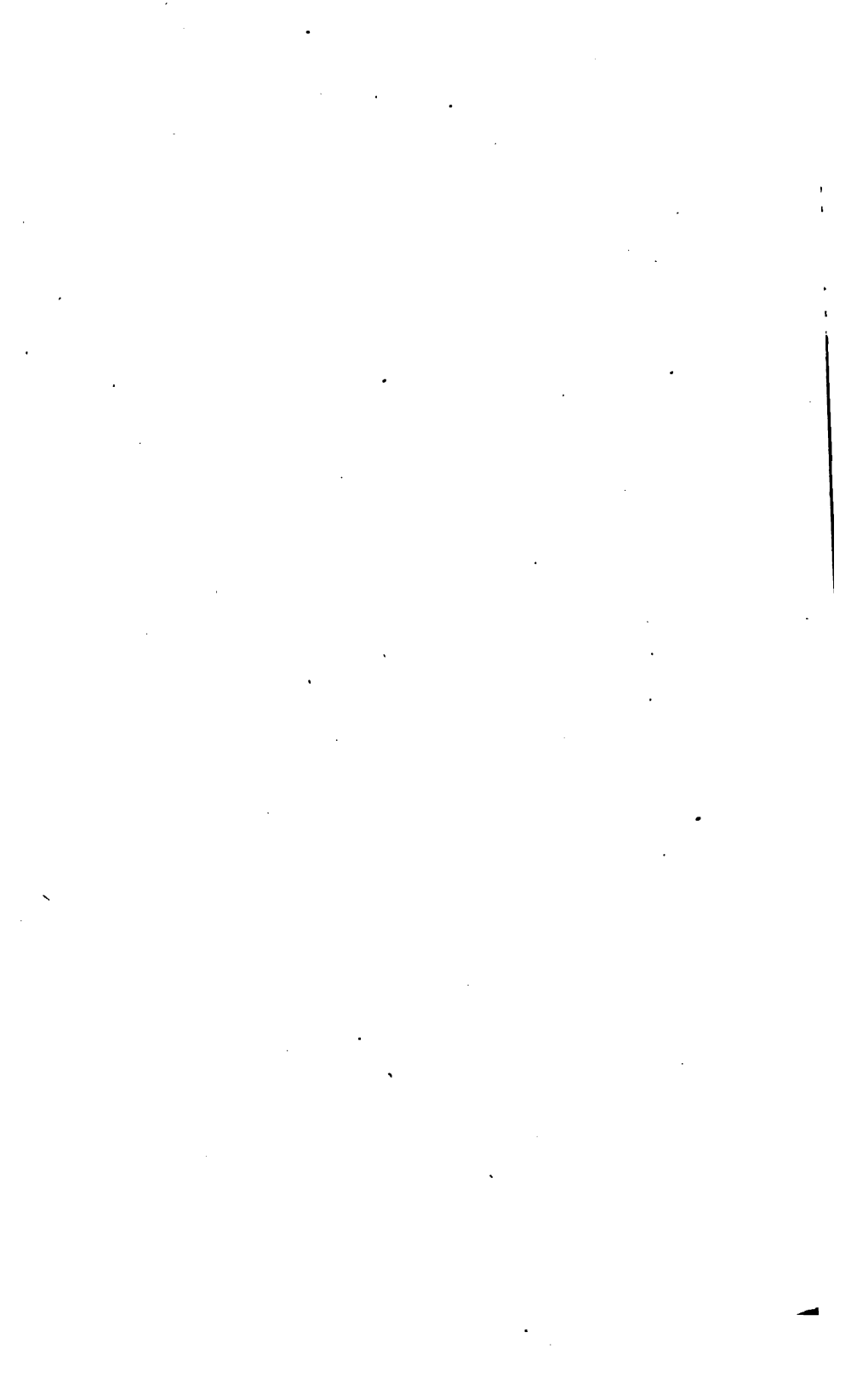
J. SHORE.

The price of the Oral Respirator for Gentlemen is ten dollars; for Ladies, nine dollars. The price of the Orinasaal Respirator for Gentlemen, is fifteen dollars; for Ladies, fourteen dollars.

The above instrument, together with a general assortment of Drugs, Medicines, Surgical Instruments, anatomical preparations, Chemical and Philosophical apparatus, &c. &c. constantly for sale at

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